

Appendix A

APPENDIX A

VALIDATED ANALYTICAL RESULTS FOR THE TSF DISPOSAL POND SURFICIAL SEDIMENT SAMPLES

Analytical Methods

Volatile organics	United States Environmental Protection Agency (EPA) Contract Laboratory Program (CLP)
Semivolatile organics	EPA CLP
Inorganics (metals)	EPA CLP (SOW 7/88)
Pesticides/PCBs	EPA CLP
Herbicides	SW-846 8150

DATA QUALIFIER DEFINITIONS

Organic Analysis Data Flags

- A - Indicates that a tentatively identified compound is a suspected aldol-condensation product.
- B - Used when the analyte is found in the associated blank as well as in the sample.
- C - Applies to pesticide results where the identification has been confirmed by GC/MS.
- D - Identifies all compounds identified in an analysis at a secondary dilution factor.
- E - Identifies compounds which have concentrations that exceed the calibration range of the GC/MS instrument for that specific analysis
- J - Indicates as estimated value.
- U - Indicates compound was analyzed for but not detected.

Organic Validation Data Qualifiers

- J - The analyte was positively identified in the sample, but the associated numerical value may not be an accurate representation of the amount actually present in the environmental sample. The data should be seriously considered for decision making and are usable for many purposes.
- N - Presumptive evidence of the presence of the material.
- NJ - Presumptive evidence of the presence of the material at an estimated quantity.
- R - The data are unusable (may or may not be present). Resampling and reanalysis is necessary for verification.
- U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
- UJ - The material was analyzed for, but was not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFIER DEFINITIONS

Inorganic Analysis Data Flags

- B - Value is less than the CRDL, but greater than the IDL.
- E - Value is estimated because of the presence of interference.
- N - Spiked sample recovery not within control limits.
- NR - Analyte was not required to be analyzed.
- S - Value was determined by the method of standard additions (MSA).
- U - Analyte was analyzed for but not detected.
- W - Post digestion spike for Furnace AA analysis is out of control limits (85% to 115%), while sample absorbance is less than 50% of spike absorbance.
- * - Duplicate analysis not within control limits.

Methods

- A - Flame AA.
- CV - Manual Cold Vapor AA.
- F - Furnace AA.
- NR - Not run, analyte not required to be analyzed.
- P - Inductively Couple Plasma-Atomic Emission Spectrometry.

Inorganic Validation Data Qualifiers

- J - The analyte was analyzed for and was positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- R - The data are unusable.
- U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
- UJ - The material was analyzed for, but was not detected. The associated value is an estimate and may not accurately reflect the instrument detection limit in the sample matrix.

Reference: Environmental Restoration Department, Sample Management Office Standard Operating Procedures 12.1.4 and 12.1.5 (EG&G, Idaho).

TABLE 1989 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SUG NUMBER	TSF So OF BLDG 65 AUGER HOLE #1 TAG0189A01A	TSF So OF BLDG 65 AUGER HOLE #1 TAG0189B01A	TSF So OF BLDG 65 AUGER HOLE #1 TAG0189B02A	TSF So OF BLDG 65 AUGER HOLE #1 TAG0189C01A	TSF So OF BLDG 65 AUGER HOLE #1 TAG0189C02A	TSF So OF BLDG 65 AUGER HOLE #1 TAG0189D01A	TSF So OF BLDG 65 AUGER HOLE #1 TAG0189E01A
	SOIL ug/kg TAGEQ89002	WATER ug/L TAGEQ89002	SOIL ug/kg TAGEQ89002	SOIL ug/kg TAGEQ89002	SOIL ug/kg TAGEQ89002	SOIL ug/kg TAGEQ89002	SOIL ug/kg TAGEQ89002
FIELD MEASUREMENTS							
Depth (ft)	0-2	5-7	5-7	10-12	10-12	15-17	20-22
TARGET COMPOUNDS							
Methylene Chloride	---	9 J	---	---	2 J	---	---
Acetone	10 J	---	10 J	24 J	68 J	---	---
Carbon Disulfide	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---
1,2-Dichloroethene_(total)	---	---	---	---	---	---	---
Chloroform	---	---	---	---	---	---	---
1,2-Dichloroethane	---	---	---	---	---	---	---
2-Butanone	---	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	---	---	---	---	---
Carbon Tetrachloride	---	---	---	---	---	---	---
Vinyl Acetate	---	---	---	---	---	---	---
Bromodichloromethane	---	---	---	---	---	---	---
1,2-Dichloropropane	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	---	---	---	---	---	---	---
Trichloroethene	---	---	---	---	---	---	---
Dibromochloromethane	---	---	---	---	---	---	---
1,1,2-Trichloroethane	---	---	---	---	---	---	---
Benzene	---	---	---	---	---	---	---
Trans-1,3-Dichloropropene	---	---	---	---	---	---	---
Bromoform	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	---	---	---	---	---	---	---
2-Hexanone	---	---	---	---	---	---	---
Tetrachloroethene	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	---	---	---	---	---	---	---
Toluene	---	31	---	---	---	---	---
Isobutanol	---	---	---	---	---	---	---
Total (Allowed) Hold Time	9(14)d 1.000	10(14)d 1.000	9(14)d 1.000	9(14)d 1.000	9(14)d 1.000	9(14)d 1.000	9(14)d 1.000
Dilution Factor							

1989 TAN Hydrogeologic Investigation S&A Data Document : November 1991

TABLE 1989 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA (Continued)

Page 2 of 8

1989 TAN Hydrogeologic Investigation S&A Data Document • November 1991

Page 3 of 8

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF So OF BLDG 60 AUGER HOLE #2 TAG0289D02A	TSF So OF BLDG 60 AUGER HOLE #2 TAG0289E01A	TSF So OF BLDG 60 AUGER HOLE #2 TAG0289F01A	TSF So OF BLDG 60 AUGER HOLE #2 TAG0289H01A	TSF DISPOSAL POND AUGER HOLE #3 TAG0389A01A	TSF DISPOSAL POND AUGER HOLE #3 TAG0389B01A	TSF DISPOSAL POND AUGER HOLE #3 TAG0389B01B
FIELD MEASUREMENTS	TSF Soil ug/kg TAGEQ89002	TSF Soil ug/kg TAGEQ89002	TSF Soil ug/kg TAGEQ89002	TSF Soil ug/kg TAGEQ89002	TSF Soil ug/kg TAGEQ89001	TSF Water ug/L TAGEQ89001	TSF Water ug/L TAGEQ89001
Depth (ft)	15-17	20-22	25-27	35-37	0-2	5-7	5-7
TARGET COMPOUNDS							
Methylene Chloride	---	---	---	---	---	6 J	5 J
Acetone	68 J	24 J	---	24 J	---	42 J	120 J
Carbon Disulfide	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---
1,2-Dichloroethene_(total)	---	---	---	---	---	---	---
Chloroform	---	---	---	---	---	---	---
1,2-Dichloroethane	---	---	---	---	---	---	---
2-Butanone	---	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	---	---	---	---	---
Carbon Tetrachloride	---	---	---	---	---	---	---
Vinyl Acetate	---	---	---	---	---	---	---
Bromodichloromethane	---	---	---	---	---	---	---
1,2-Dichloropropene	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	---	---	---	---	---	---	---
Trichloroethene	---	---	---	5	---	---	---
Dibromochloromethane	---	---	---	---	---	---	---
1,1,2-Trichloroethane	---	---	---	---	---	---	---
Benzene	---	---	---	---	---	---	---
Trans-1,3-Dichloropropene	---	---	---	---	---	---	---
Bromoform	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	---	---	---	---	---	---	---
2-Hexanone	---	---	---	---	---	---	---
Tetrachloroethene	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	---	---	---	---	---	---	---
Toluene	---	1 J	---	---	15	3 J	2 J
Isobutanol	---	---	---	---	---	---	---
Total (Allowed) Hold Time	8(14)d 1.000	8(14)d 1.000	8(14)d 1.000	8(14)d 1.000	11(14)d 1.000	22(14)d* 1.000	22(14)d* 1.000
Dilution Factor							

1989 TAN Hydrogeologic Investigation S&A Data Document - November 1991

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA (Continued)

Page 4 of 8

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #3 TAG0389B02A	TSF DISPOSAL POND AUGER HOLE #3 TAG0389B02ADL	TSF DISPOSAL POND AUGER HOLE #3 TAG0389B02B	TSF DISPOSAL POND AUGER HOLE #3 TAG0389C01A	TSF DISPOSAL POND AUGER HOLE #3 TAG0389C02A	TSF DISPOSAL POND AUGER HOLE #3 TAG0389001A	TSF DISPOSAL POND AUGER HOLE #3 TAG0389E01A
	WATER ug/L TAGE089001	WATER ug/L TAGE089001	WATER ug/L TAGE089001	SOIL ug/kg TAGE089001	SOIL ug/kg TAGE089001	SOIL ug/kg TAGE089001	SOIL ug/kg TAGE089001
FIELD MEASUREMENTS							
Depth (ft)	5-7	5-7	5-7	10-12	10-12	15-17	20-22
TARGET COMPOUNDS							
Methylene Chloride	5 J	5 JD	5 J	---	---	---	---
Acetone	210 J	190 DJ	27 J	---	27	10 J	6 J
Carbon Disulfide	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---
1,2-Dichloroethene (total)	---	---	---	---	---	---	---
Chloroform	---	---	---	---	---	---	---
1,2-Dichloroethane	---	---	---	---	---	---	---
2-Butanone	---	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	---	---	---	---	---
Carbon Tetrachloride	---	---	---	---	---	---	---
Vinyl Acetate	---	---	---	---	---	---	---
Bromodichloromethane	---	---	---	---	---	---	---
1,2-Dichloropropane	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	---	---	---	---	---	---	---
Trichloroethene	---	---	---	---	---	---	---
Dibromochloromethane	---	---	---	---	---	---	---
1,1,2-Trichloroethane	---	---	---	---	---	---	---
Benzene	---	---	---	---	---	---	---
Trans-1,3-Dichloropropene	---	---	---	---	---	---	---
Bromoform	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	---	---	---	---	---	---	---
2-Hexanone	---	---	---	---	---	---	---
Tetrachloroethene	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	---	---	---	---	---	---	---
Toluene	2 J	2 JD	2 J	5	---	1 J	---
Isobutanol							
Total (Allowed) Hold Time	22(14)d*	23(14)d*	23(14)d*	11(14)d	11(14)d	11(14)d	11(14)d
Dilution Factor	1.000	2.000	1.000	1.000	1.000	1.000	1.000

1989 TAN Hydrogeologic Investigation S&A Data Document • November 1991

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA (Continued)

Page 5 of 8

1989 TAN Hydrogeologic Investigation S&A Data Document • November 1991

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA (Continued)

Page 6 of 8

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #4 TAG0489E01A	TSF DISPOSAL POND AUGER HOLE #4 TAG0489F01A	TSF DISPOSAL POND AUGER HOLE #4 TAG0489J01A	TSF DISPOSAL POND AUGER HOLE #5 TAG0589A01A	TSF DISPOSAL POND AUGER HOLE #5 TAG0589B01A	TSF DISPOSAL POND AUGER HOLE #5 TAG0589B01ADL	TSF DISPOSAL POND AUGER HOLE #5 TAG0589C01A
	SOIL ug/kg TAGEQ89002	SOIL ug/kg TAGEQ89002	SOIL ug/kg TAGEQ89002	SOIL ug/kg TAGEQ89001	WATER ug/L TAGEQ89001	WATER ug/L TAGEQ89001	SOIL ug/kg TAGEQ89001
FIELD MEASUREMENTS							
Depth (ft)	20-22	25-27	45-47	0-2	5-7	5-7	10-12
TARGET COMPOUNDS							
Methylene Chloride	2 J	---	---	1 J	78 J	41 DJ	4 J
Acetone	---	8 J	---	---	280 J	180 DJ	---
Carbon Disulfide	---	---	---	---	5 J	---	---
1,1-Dichloroethene	---	---	---	---	5 J	---	---
1,1-Dichloroethane	---	---	---	---	5 J	---	---
1,2-Dichloroethene_(total)	---	---	---	---	5 J	---	---
Chloroform	---	---	---	---	5 J	---	---
1,2-Dichloroethane	---	---	---	---	5 J	---	---
2-Butanone	---	---	---	---	10 J	---	---
1,1,1-Trichloroethane	---	---	---	---	5 J	---	---
Carbon Tetrachloride	---	---	---	---	5 J	---	---
Vinyl Acetate	---	---	---	---	10 J	---	---
Bromodichloromethane	---	---	---	---	5 J	---	---
1,2-Dichloropropane	---	---	---	---	5 J	---	---
cis-1,3-Dichloropropene	---	---	---	---	5 J	---	---
Trichloroethene	---	---	---	---	5 J	---	---
Dibromochloromethane	---	---	---	---	5 J	---	---
1,1,2-Trichloroethane	---	---	---	---	5 J	---	---
Benzene	---	---	---	---	5 J	---	---
Trans-1,3-Dichloropropene	---	---	---	---	5 J	---	---
Bromoform	---	---	---	---	5 J	---	---
4-Methyl-2-Pentanone	---	---	---	---	10 J	---	---
2-Hexanone	---	---	---	---	10 J	---	---
Tetrachloroethene	---	---	---	---	5 J	---	---
1,1,2,2-Tetrachloroethane	---	---	---	---	5 J	---	---
Toluene	---	---	---	17	33 J	27 DJ	---
Isobutanol	---	---	---				
Total (Allowed) Hold Time	6(14)d 1.000	7(14)d 1.000	6(14)d 1.000	9(14)d 1.000	18(14)d* 1.000	18(14)d** 2.000	10(14)d 1.000
Dilution Factor							

1989 TAN Hydrogeologic Investigation S&A Data Document • November 1991

TABLE _._._ 1989 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA (Continued)

Page 7 of 8

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #5 TAG0589C02A	TSF DISPOSAL POND AUGER HOLE #5 TAG0589D01A	TSF DISPOSAL POND AUGER HOLE #5 TAG0589E01A	TSF DISPOSAL POND AUGER HOLE #5 TAG0589K01A	TSF DISPOSAL POND AUGER HOLE #6 TAG0689A01A	TSF DISPOSAL POND AUGER HOLE #6 TAG0689B01A	TSF DISPOSAL POND WATER ug/L TAGEQ89U01	TSF DISPOSAL POND AUGER HOLE #6 TAG0689B02A
	SOIL ug/kg TAGEQ89U01	SOIL ug/kg TAGEQ89U01	SOIL ug/kg TAGEQ89U01	SOIL ug/kg TAGEQ89U01	SOIL ug/kg TAGEQ89U01	SOIL ug/kg TAGEQ89U01	WATER ug/L TAGEQ89U01	SOIL ug/kg TAGEQ89U01
FIELD MEASUREMENTS								
Depth (ft)	10-12	15-17	20-22	50-52	0-2	5-7	5-7	
TARGET COMPOUNDS								
Methylene Chloride	1 J	2 J	2 J	---	---	19 J	---	---
Acetone	---	---	---	---	---	33 J	---	---
Carbon Disulfide	---	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---	---
1,2-Dichloroethene_(total)	---	---	---	---	---	---	---	---
Chloroform	---	---	---	---	---	---	---	---
1,2-Dichloroethane	---	---	---	---	---	---	---	---
2-Butanone	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	---	---	---	---	---	---
Carbon Tetrachloride	---	---	---	---	---	---	---	---
Vinyl Acetate	---	---	---	---	---	---	---	---
Bromodichloromethane	---	---	---	---	---	---	---	---
1,2-Dichloropropane	---	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	---	---	---	---	---	---	---	---
Trichloroethene	---	---	---	---	---	---	---	---
Dibromochloromethane	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	---	---	---	---	---	---	---	---
Benzene	---	---	---	---	---	---	---	---
Trans-1,3-Dichloropropene	---	---	---	---	---	---	---	---
Bromoform	---	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	---	---	---	---	---	---	---	---
2-Hexanone	---	---	---	---	---	---	---	---
Tetrachloroethene	---	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	---	---	---	---	---	---	---	---
Toluene	2 J	---	3 J	---	---	4 J	---	
Isobutanol								
Total (Allowed) Hold Time	9(14)d 1.000	10(14)d 1.000	9(14)d 1.000	8(14)d 1.000	9(14)d 1.000	18(14)d* 1.000	9(14)d 1.000	
Dilution Factor								

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #6 TAG0689C01A	TSF DISPOSAL POND AUGER HOLE #6 TAG0689D01A	TSF DISPOSAL POND AUGER HOLE #6 TAG0689D02A	TSF DISPOSAL POND AUGER HOLE #6 TAG0689E01A	TSF DISPOSAL POND AUGER HOLE #6 TAG0689F01A	TSF DISPOSAL POND AUGER HOLE #7 TAG0789N01A	TSF DISPOSAL POND AUGER HOLE #7 TAG0789N01A
FIELD MEASUREMENTS							
Depth (ft)	10-12	15-17	15-17	20-22	25-27	63-64	
TARGET COMPOUNDS							
Methylene Chloride	---	---	---	---	---	---	---
Acetone	---	---	74 J	120 J	---	---	---
Carbon Disulfide	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---
1,2-Dichloroethene_(total)	---	---	---	---	---	---	---
Chloroform	---	---	---	---	---	---	---
1,2-Dichloroethane	---	---	---	---	---	---	---
2-Butanone	---	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	---	---	---	---	---
Carbon Tetrachloride	---	---	---	---	---	---	---
Vinyl Acetate	---	---	---	---	---	---	---
Bromodichloromethane	---	---	---	---	---	---	---
1,2-Dichloropropane	6 R	---	---	---	---	---	---
cis-1,3-Dichloropropene	---	---	---	---	---	---	---
Trichloroethene	---	---	---	---	---	---	---
Dibromochloromethane	---	---	---	---	---	---	---
1,1,2-Trichloroethane	---	---	---	---	---	---	---
Benzene	---	---	---	---	---	---	---
Trans-1,3-Dichloropropene	---	---	---	---	---	---	---
Bromoform	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	---	---	---	---	---	---	---
2-Hexanone	---	---	---	---	---	---	---
Tetrachloroethene	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	---	---	---	---	---	---	---
Toluene	---	---	---	---	---	---	2 J
Isobutanol	620 R	---	---	---	---	---	
Total (Allowed) Hold Time	10(14)d 1.000	9(14)d 1.000	9(14)d 1.000	9(14)d 1.000	11(14)d 1.000	10(14)d 1.000	
Dilution Factor							

E-A

1989 TAN Hydrogeologic Investigation S&A Data Document • November 1991

TABLE - - 1989 TAN HYDROGEOLOGIC INVESTIGATION - SEMIVOLATILE ORGANIC DATA

Page 1 of 2

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - SEMIVOLATILE ORGANIC DATA

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	DISPOSAL POND				
TYPE OF LOCATION	AUGER HOLE #4	AUGER HOLE #5	AUGER HOLE #6	AUGER HOLE #6	AUGER HOLE #6
SAMPLE NUMBER	TAG0489C01CR	TAG0589B01C	TAG0689B01CR	TAG0689C01C	TAG0689C01CRE
MEDIA	SOIL	WATER	WATER	SOIL	SOIL
UNITS	ug/kg	ug/L	ug/L	ug/kg	ug/kg
SDG NUMBER	TAGEQ89002	TAGEQ89001	TAGEQ89001	TAGEQ89001	TAGEQ89001
FIELD MEASUREMENTS					
Depth (ft)	10-12	5-7	5-7	10-12	10-12
TARGET COMPOUNDS					
Phenol	---	---	---	---	---
2-Chlorophenol	---	---	---	---	---
Benzyl alcohol	---	---	---	---	---
2-Methylphenol	---	---	---	---	---
4-Methylphenol	---	---	---	---	---
2-Nitrophenol	---	---	---	---	---
2,4-Dimethylphenol	---	---	---	---	---
Benzoic acid	2000 R	---	---	---	---
2,4-Dichlorophenol	---	---	---	---	---
4-Chloro-3-methylphenol	---	---	---	---	---
2,4,6-Trichlorophenol	---	---	---	---	---
2,4,5-Trichlorophenol	---	---	---	---	---
2,4-Dinitrophenol	---	---	---	---	---
4-Nitrophenol	---	---	---	---	---
4,6-Dinitro-2-methylphenol	---	---	---	---	---
Pentachlorophenol	---	---	---	---	---
Di-n-butylphthalate	---	---	1 J	---	---
bis(2-Ethylhexyl)phthalate	---	---	---	---	---
4-Nitroquinoline-1-oxide					1600 R
Kepone					400 R
Total (Allowed) Hold Time	4(14)d	10(7)d*	22(7)d*	12(14)d	12(14)d
Dilution Factor	1.000	1.000	1.000	1.000	1.000

1989 TAN Hydrogeologic Investigation S&A Data Document • November 1991

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA

Page 1 of 9

AREA	TSF SO OF BLDG 654						
LOCATION	AUGER HOLE #1						
TYPE OF LOCATION	TAG0189A01B	TAG0189B01B	TAG0189B02B	TAG0189C01B	TAG0189C02B	TAG0189C02B	TAG0189D01B
SAMPLE NUMBER							
MEDIA	SOIL	WATER	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	ug/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SDG NUMBER	TAGEQ89002						
FIELD MEASUREMENTS							
Depth (ft)	0-2	5-7	5-7	10-12	10-12	10-12	15-17
TARGET COMPOUNDS							
Aluminum	12900	---	15500	8590	8990	8990	14600
Antimony	---	---	---	---	---	---	---
Arsenic	8.1 N+	6.4 B	7.5 NS	3.1 BNS	4.5 NS	4.5 NS	10.7 N+
Barium	217	815	249	151	161	161	170
Beryllium	2.1	---	2.5	1.6	1.7	1.7	---
Cadmium	1.1	2.0 B	1.4	0.60 B	0.97	0.97	1.1
Calcium	87300	728000	93200	73900	76400	76400	109000
Chromium	34.5	---	31.4	21.4	22.3	22.3	34.3
Cobalt	9.0 B	---	10.0	5.4 B	5.6 B	5.6 B	8.5 B
Copper	23.0	---	24.5	11.8	13.8	13.8	23.8
Cyanide							
Iron	18700	49.0 B	19200	12200	13100	13100	19600
Lead	25.5 S	2.1 B	28.6 S	17.7 S	16.9 S	16.9 S	44.3 S
Magnesium	14000	27200 B	15100	12300	12500	12500	15400
Manganese	413	122	390	196	227	227	345
Mercury	0.26	---	---	---	---	---	---
Nickel	37.1	---	38.6	21.9	25.2	25.2	35.2
Potassium	3020 B	460 B	3180 B	2200 B	2960	2960	2980
Selenium	0.26 BW	---	---	---	---	---	---
Silver	---	---	---	---	---	---	---
Sodium	562 B	16600	822 B	506 B	612 B	612 B	728 B
Sulfide							
Thallium	0.26 B	---	0.20 BW	---	---	---	0.27 B
Tin							
Vanadium	46.8	18.0 B	47.5	33.0	35.3	35.3	49.8
Zinc	135	41.0	129	78.4	92.3	92.3	108
% Solids	88.4		87.9	92.7	91.3	91.3	84.0
Total (Allowed) Hold Time ^a	28(180)d	11(180)d	28(180)d	28(180)d	28(180)d	28(180)d	28(180)d
Total (Allowed) Hold Time ^b	28(180)d	11(180)d	28(180)d	28(180)d	28(180)d	28(180)d	28(180)d
Total (Allowed) Hold Time ^c	25(26)d	23(26)d	25(26)d	25(26)d	25(26)d	25(26)d	25(26)d
Total (Allowed) Hold Time ^d	28(180)d	11(180)d	28(180)d	28(180)d	28(180)d	28(180)d	28(180)d
Total (Allowed) Hold Time ^e							

a. ICP

b. FAAS

c. CVAAS

d. GFAAS

e. AS

TABLE _._. 1989 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA

Page 2 of 9

AREA	TSF SO OF BLDG 654	TSF SO OF BLDG 654	TSF SO OF BLDG 654	TSF SO OF BLDG 607			
LOCATION	AUGER HOLE #1	AUGER HOLE #1	AUGER HOLE #1	AUGER HOLE #2	AUGER HOLE #2	AUGER HOLE #2	AUGER HOLE #2
TYPE OF LOCATION	TAG0189E01B	TAG0189H01B	TAG0189K01B	TAG0289A01B	TAG0289B01B	TAG0289C01B	TAG0289D01B
SAMPLE NUMBER	SOIL	SOIL	SOIL	SOIL	SOIL	WATER	WATER
MEDIA						ug/L	ug/L
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/L	ug/L
SDG NUMBER	TAGEQ89002						
FIELD MEASUREMENTS							
Depth (ft)	20-22	35-37	50-52	0-2	5-7	5-7	5-7
TARGET COMPOUNDS							
Aluminum	1900	12400	16100	17000	137 B	---	---
Antimony	---	---	---	---	---	---	---
Arsenic	15.8 N+	10.6 NS	5.3 N+	10.7 NS	4.3 B	4.8 B	862
Barium	339	230	254	248	885	---	---
Beryllium	---	---	---	---	---	---	---
Cadmium	0.92	0.88 B	0.67 B	1.3	---	---	---
Calcium	74200	84200	13400	77600	728000	742000	742000
Chromium	44.8	36.6	42.7	39.8	---	---	---
Cobalt	12.0	10.5 B	11.9	10.5	---	---	---
Copper	31.5	23.5	25.4	154	---	---	---
Cyanide	---	---	---	---	---	---	---
Iron	25300	19300	29000	21800	91.0 B	78.0 B	78.0 B
Lead	28.4 S	15.3 S	27.6 S	27.3 S	---	---	---
Magnesium	14200	12500	8240 B	13800	26800 B	26200 B	26200 B
Manganese	539	605	979	398	41.0	49.0	49.0
Mercury	0.10 B	---	---	---	---	---	---
Nickel	40.4	34.0	33.5	37.6	---	---	---
Potassium	354 B	2510	3250	6800	550 B	440 B	440 B
Selenium	0.35 BW	---	---	---	---	---	---
Silver	---	---	---	---	---	---	---
Sodium	611 B	576 B	358 B	734 B	5950	5700	5700
Sulfide	---	---	---	---	---	---	---
Thallium	0.33 B	---	0.19 B	0.15 BW	---	---	---
Tin	---	---	---	---	---	---	---
Vanadium	68.3	48.9	57.0	53.5	14.0 B	14.0 B	14.0 B
Zinc	118	80.0	97.5	123	60.0	41.0	41.0
% Solids	84.7	86.9	87.3	93.4	---	---	---
Total (Allowed) Hold Time ^a	28(180)d	28(180)d	27(180)d	28(180)d	11(180)d	11(180)d	11(180)d
Total (Allowed) Hold Time ^b	28(180)d	28(180)d	27(180)d	28(180)d	11(180)d	11(180)d	11(180)d
Total (Allowed) Hold Time ^c	25(26)d	25(26)d	24(26)d	25(26)d	23(26)d	23(26)d	23(26)d
Total (Allowed) Hold Time ^d	28(180)d	28(180)d	27(180)d	28(180)d	11(180)d	11(180)d	11(180)d
Total (Allowed) Hold Time ^e	---	---	---	---	---	---	---

a. ICP

b. FAAS

c. CVAAS

d. GFAAS

e. AS

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA

Page 3 of 9

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF SO OF BLDG 607 AUGER HOLE #2 TAG0289C018	TSF SO OF BLDG 607 AUGER HOLE #2 TAG0289D018	TSF SO OF BLDG 607 AUGER HOLE #2 TAG0289D028	TSF SO OF BLDG 607 AUGER HOLE #2 TAG0289E018	TSF SO OF BLDG 607 AUGER HOLE #2 TAG0289F018	TSF SO OF BLDG 607 AUGER HOLE #2 TAG0289H018	TSF SO OF BLDG 607 AUGER HOLE #2 TAG0289I018
FIELD MEASUREMENTS							
Depth (ft)	10-12	15-17	15-17	20-22	25-27	35-37	
TARGET COMPOUNDS							
Aluminum	15100	18100	21100	15300	16200	18400	
Antimony	---	---	---	---	---	---	
Arsenic	12.6 NS	19.2 N+	12.9	14.0 NS	13.8 NS	11.3 NS	
Barium	241	313	264	290	227	336	
Beryllium	---	---	1.0	1.6	1.7	2.2	
Cadmium	1.2	1.2	1.6	1.0	1.0	1.8	
Calcium	81900	69300	95500	64500	51200	20300	
Chromium	34.7	42.3	38.4	37.1	36.1	56.3	
Cobalt	10.6	12.8	11.0	12.9	13.2	13.3	
Copper	27.3	32.6	32.2	30.8	31.0	43.5	
Cyanide							
Iron	21300	23900	27000	22800	22900	25600	
Lead	28.4 S	34.3 S	37.9 S	26.6 S	21.3 S	22.7 S	
Magnesium	13400 B	13400	16600 B	14000	9230 B	8910 B	
Manganese	427	470	414	487	734	1560	
Mercury	0.11 B	---	---	0.13	---	---	
Nickel	36.1	38.5	37.8	40.9	44.0	57.6	
Potassium	4260	4400	3240 B	3880	3020	3590	
Selenium	---	0.39 BW	---	---	0.32 BW	---	
Silver	---	---	---	---	---	---	
Sodium	516 B	548 B	516 B	451 B	432 B	393 B	
Sulfide							
Thallium	0.29 BW	0.29 B	0.21 BW	0.29 BW	0.27 BW	0.37 B	
Tin							
Vanadium	53.6	67.2	59.3	57.8	52.8	58.1	
Zinc	114	116	117	126	109	129	
% Solids	92.3	93.3	92.8	92.8	92.6	91.1	
Total (Allowed) Hold Time ^a	28(180)d	28(180)d	28(180)d	28(180)d	28(180)d	28(180)d	
Total (Allowed) Hold Time ^b	28(180)d	28(180)d	28(180)d	28(180)d	28(180)d	28(180)d	
Total (Allowed) Hold Time ^c	25(26)d	25(26)d	25(26)d	25(26)d	25(26)d	25(26)d	
Total (Allowed) Hold Time ^d	28(180)d	28(180)d	28(180)d	28(180)d	28(180)d	28(180)d	
Total (Allowed) Hold Time ^e							

- a. ICP
b. FAAS
c. CVAAS
d. GFAAS
e. AS

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA

Page 4 of 9

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #3 TAG0389A01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #3 TAG0389B01B WATER ug/L TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #3 TAG0389B02B WATER ug/L TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #3 TAG0389C01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #3 TAG0389C02B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #3 TAG0389D01B SOIL mg/kg TAGEQ89001
<u>FIELD MEASUREMENTS</u>						
Depth (ft)	0-2	5-7	5-7	10-12	10-12	15-17
<u>TARGET COMPOUNDS</u>						
Aluminum	21000	211	---	18500	16200	17500
Antimony	---	24.0 B	24.0 B	---	---	---
Arsenic	8.7 S	6.3 B	6.7 B	14.2 S	14.3 +	17.4 S
Barium	291	1350	1470	249	254	306
Beryllium	3.0	---	---	3.4	3.1	3.2
Cadmium	1.8	3.0 B	5.0	1.0	1.0	1.1
Calcium	59300 E	1020000	1090000	62000 E	61000 E	72900 E
Chromium	45.7	---	---	41.1	35.3	37.3
Cobalt	13.2	---	---	12.0	11.1	11.5
Copper	29.0	27.0	---	26.3	25.4	24.5
Cyanide						
Iron	28000	134	68.0 B	24900	23300	24300
Lead	30.5 S	---	---	26.4 S	26.7 S	26.0 S
Magnesium	14500	22000	24800 B	13600	13200	14500
Manganese	445	369	433	457	426	473
Mercury	0.09 B	0.24	---	---	0.05 B	0.11 B
Nickel	49.7	20.0 B	---	40.7	39.3	40.3
Potassium	4810 B	---	---	3430 B	2880 B	2860 B
Selenium	---	---	---	---	---	0.26 BW
Silver	---	---	---	---	---	---
Sodium	516 B	3980 B	4290 B	453 B	504 B	603 B
Sulfide						
Thallium	1.1 BN	---	---	0.36 BN	0.22 BN	0.30 BN
Tin						
Vanadium	50.3	15.0 B	17.0 B	59.0	50.4	56.2
Zinc	892	51.0	49.0	138	126	123
% Solids	91.9			93.2	93.6	87.0
Total (Allowed) Hold Time ^a	25(180)d	28(180)d	28(180)d	25(180)d	25(180)d	25(180)d
Total (Allowed) Hold Time ^b	25(180)d	40(180)d	40(180)d	25(180)d	25(180)d	25(180)d
Total (Allowed) Hold Time ^c	11(26)d	20(26)d	20(26)d	11(26)d	11(26)d	11(26)d
Total (Allowed) Hold Time ^d	25(180)d	28(180)d	28(180)d	25(180)d	25(180)d	25(180)d
Total (Allowed) Hold Time ^e						

- a. ICP
b. FAAS
c. CVAAAS
d. GFAAS
e. AS

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #3 TAG0389E01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #3 TAG0389F01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #4 TAG0489A01B SOIL mg/kg TAGEQ89002	TSF DISPOSAL POND AUGER HOLE #4 TAG0489B01B WATER µg/L TAGEQ89002	TSF DISPOSAL POND AUGER HOLE #4 TAG0489B02B SOIL mg/kg TAGEQ89002	TSF DISPOSAL POND AUGER HOLE #4 TAG0489C01B SOIL mg/kg TAGEQ89002
FIELD MEASUREMENTS						
Depth (ft)	20-22	25-27	0-2	5-7	5-7	10-12
TARGET COMPOUNDS						
Aluminum	1400	16700	23400	954	16100	
Antimony	---	---	---	---	---	---
Arsenic	13.7 S	11.4 +	5.1 +	4.1 B	17.3 S	18.2
Barium	253	283	293	983	260	356
Beryllium	2.8	3.6	4.6	---	3.6	---
Cadmium	1.2	0.69 B	1.7	3.0 B	1.0 B	0.97 B
Calcium	70700 E	19600 E	50500	725000	83200	
Chromium	33.4	36.9	45.6	---	33.8	44.4
Cobalt	10.8	11.7	12.4	---	11.7	13.8
Copper	21.9	22.3	27.3	---	26.2	39.5
Cyanide						---
Iron	20700	25200	28400	685	24000	
Lead	21.4 S	26.2 S	30.4 S	2.3 B	29.2 S	23.6
Magnesium	13000	9230	14400	25800 B	14600	
Manganese	495	482	345	129	501	
Mercury	0.08 B	0.21	0.05 B	---	---	0.10 B
Nickel	34.7	36.9	48.8	---	39.1	44.6
Potassium	3010 B	2660 B	6010	1820 B	3160 B	
Selenium	---	---	0.26 BW	---	0.63 BW	---
Silver	---	---	---	---	---	---
Sodium	500 B	412 B	723 B	4030 B	570 B	
Sulfide						---
Thallium	0.21 BN	0.21 BN	0.21 BN	---	---	---
Tin						---
Vanadium	49.3	44.9	54.7	15.0 B	56.8	51.9
Zinc	96.0	105	201	49.0	118	126
% Solids	88.2	85.1	90.6		90.3	81.7
Total (Allowed) Hold Time ^a	25(180)d	25(180)d	13(180)d	16(180)d	13(180)d	38(180)d
Total (Allowed) Hold Time ^b	25(180)d	25(180)d	13(180)d	16(180)d	13(180)d	
Total (Allowed) Hold Time ^c	11(26)d	11(26)d	27(26)d	28(26)d	27(26)d	36(26)d*
Total (Allowed) Hold Time ^d	25(180)d	25(180)d	13(180)d	16(180)d	13(180)d	38(180)d
Total (Allowed) Hold Time ^e						26(12)d*

- a. ICP
 b. FAAS
 c. CVAA
 d. GFAAS
 e. AS

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA

Page 6 of 9

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #4 TAG0489D01B	TSF DISPOSAL POND AUGER HOLE #4 TAG0489D02B	TSF DISPOSAL POND AUGER HOLE #4 TAG0489E01B	TSF DISPOSAL POND AUGER HOLE #4 TAG0489F01B	TSF DISPOSAL POND AUGER HOLE #4 TAG0489J01B	TSF DISPOSAL POND AUGER HOLE #5 TAG0589A01B
FIELD MEASUREMENTS	SOIL mg/kg TAGEQ89002	SOIL mg/kg TAGEQ89002	SOIL mg/kg TAGEQ89002	SOIL mg/kg TAGEQ89002	SOIL mg/kg TAGEQ89002	SOIL mg/kg TAGEQ89001
Depth (ft)	15-17	15-17	20-22	25-27	45-47	0-2
TARGET COMPOUNDS						
Aluminum	15900	19500	25700	31400	20700	16000
Antimony	---	---	---	---	---	0.89 BNW
Arsenic	13.4 S	16.4 S	11.6 S	6.6 S	8.8 +	8.5
Barium	256	241	275	338	370	230
Beryllium	3.2	4.5	5.4	6.2	4.9	1.4
Cadmium	1.1 B	0.93	1.5	0.86 B	0.94 B	0.82 B
Calcium	72000	61800	88900	9440 B	6720 B	64200 E
Chromium	32.6	38.2	53.2	63.0	41.2	39.0
Cobalt	10.2 B	13.2	15.5	16.6	14.3	10.5
Copper	19.6	26.5	30.9	29.7	45.0	23.4
Cyanide						
Iron	23700	27500	34000	36800	28800	21300
Lead	21.9 S	28.8 S	18.5	25.9 S	18.0 S	20.2 N
Magnesium	15400	15300	16900	11800	8990 B	12500
Manganese	488	620	776	620	696	388
Mercury	0.09 B	0.11	---	0.05 B	0.14	0.14
Nickel	35.6	43.1	53.4	47.5	56.5	37.5
Potassium	3870	3280	4140	3080 B	2710	3510
Selenium	0.35 BW	0.36	0.22	---	---	---
Silver	---	---	---	---	---	0.48 B
Sodium	597 B	562 B	545 B	611 B	340 B	520 B
Sulfide						
Thallium	0.17 BN	0.56 BN	0.37 BNW	0.40 BN	0.31 BN	0.42 BW
Tin						
Vanadium	52.6	58.1	76.7	70.8	56.7	55.6
Zinc	100	112	145	139	87.4	114
% Solids	86.9	84.2	85.0	83.0	82.1	92.0
Total (Allowed) Hold Time ^a	12(180)d	12(180)d	12(180)d	12(180)d	12(180)d	8(180)d
Total (Allowed) Hold Time ^b	12(180)d	12(180)d	12(180)d	12(180)d	12(180)d	8(180)d
Total (Allowed) Hold Time ^c	26(26)d	26(26)d	26(26)d	26(26)d	26(26)d	7(26)d
Total (Allowed) Hold Time ^d	12(180)d	12(180)d	12(180)d	12(180)d	12(180)d	8(180)d
Total (Allowed) Hold Time ^e						

- a. ICP
 b. FAAS
 c. CVAAS
 d. GFAAS
 e. AS

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #5 TAG0589B01B WATER ug/L TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #5 TAG0589C018 SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #5 TAG0589C028 SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #5 TAG0589D01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #5 TAG0589E018 SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #5 TAG0589K018 SOIL mg/kg TAGEQ89001
FIELD MEASUREMENTS						
Depth (ft)	5-7	10-12	10-12	15-17	20-22	50-52
TARGET COMPOUNDS						
Aluminum	265	13900	9980	14200	12700	8530
Antimony	---	1.1 BN	0.60 BN	---	---	0.33 WN
Arsenic	8.2 B	11.5	10.2	8.5	7.2	4.8 +
Barium	1480	259	220	243	218	231
Beryllium	---	1.2	0.90 B	1.4	1.0	1.8
Cadmium	4.0 B	0.78 B	---	0.93 B	0.83 B	0.91 B
Calcium	1110000	51100 E	46400 E	75800 E	66200 E	213000 E
Chromium	---	33.9	27.8	38.5	35.4	21.3
Cobalt	---	10.1	8.7 B	10.5 B	8.7 B	6.8 B
Copper	---	21.3	16.4	19.8	15.8	21.6
Cyanide						
Iron	180	20700	16800	20400	18200	13700
Lead	---	17.6	13.8 N	16.6 N	14.0 N	11.1
Magnesium	24700 B	11600	10600 B	14100	10600	7850 B
Manganese	455	411	352	457	451	1060
Mercury	---	0.14	0.12	0.32	0.11	0.08 B
Nickel	---	30.6	27.1	36.6	31.6	25.6
Potassium	---	2880	2190	3150	2450	1510
Selenium	---	0.43 BNW	0.56 BNW	0.43 BNW	---	---
Silver	---	---	0.26 B	0.33 B	0.34 B	---
Sodium	4590 B	469 B	446 B	594 B	443 B	624 B
Sulfide						
Thallium	---	---	---	---	---	---
Tin						
Vanadium	17.0 B	50.9	42.4	55.0	47.2	30.4
Zinc	53.0	83.1	70.2	99.4	75.7	20.0
% Solids		83.4	86.6	84.9	88.2	78.7
Total (Allowed) Hold Time ^b	24(180)d	8(180)d	7(180)d	8(180)d	8(180)d	14(180)d
Total (Allowed) Hold Time ^b	36(180)d	8(180)d	7(180)d	8(180)d	8(180)d	14(180)d
Total (Allowed) Hold Time ^c	16(26)d	7(26)d	6(26)d	7(26)d	7(26)d	28(26)d*
Total (Allowed) Hold Time ^d	24(180)d	8(180)d	7(180)d	8(180)d	8(180)d	14(180)d
Total (Allowed) Hold Time ^e						

- a. ICP
b. FAAS
c. CVAAS
d. GFAAS
e. AS

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #6 TAG0689A01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #6 TAG0689B01B WATER ug/L TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #6 TAG0689B02B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #6 TAG0689C01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #6 TAG0689D01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #6 TAG0689D01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #6 TAG0689D02B SOIL mg/kg TAGEQ89001
FIELD MEASUREMENTS							
Depth (ft)	0-2	5-7	5-7	10-12	15-17	15-17	
TARGET COMPOUNDS							
Aluminum	22200	---	22800		15300		14000
Antimony	0.49 BN	---	1.1 BNW	---	0.48 BNW		---
Arsenic	8.5	4.1 B	6.7	7.2	11.6		10.5
Barium	278	1520	318	1900	278		242
Beryllium	1.6	---	1.7	8.6	1.4		1.1 B
Cadmium	1.3	4.0 B	1.5	6.2 B	0.97		0.91 B
Calcium	66000 E	1180000	61300 E		56700 E		71800 E
Chromium	51.9	---	51.0	257	41.4		37.5
Cobalt	12.1	---	12.8	69.1	10.1		11.7
Copper	27.6	---	27.5	148	25.3		23.3
Cyanide				---			
Iron	26900	58.0 B	27500		21700		21100
Lead	25.5	---	22.2 N	21.0	19.5 N		20.8 N
Magnesium	15100	27800 B	14100		11800		13600
Manganese	2260	567	660		472		546
Mercury	0.11	---	0.08 B	0.12 B	---		---
Nickel	46.7	---	47.2	240	37.5		39.5
Potassium	3790 B	---	3780 B		3360		2870
Selenium	0.60 BNW	---	---	---	0.36 BNW		0.39 BNW
Silver	0.53 B	---	0.38 BW	---	0.37 B		0.82 B
Sodium	668 B	11100	757 B		493 B		482 B
Sulfide							
Thallium	0.19 BN	---	---	---	---		---
Tin							
Vanadium	64.2	15.0 B	63.6	333	59.6		56.0
Zinc	158	65.0	151	649	103		104
% Solids	88.2		83.1	81.0	80.8		81.8
Total (Allowed) Hold Time ^a	7(180)d	23(180)d	7(180)d	7(180)d	7(180)d		7(180)d
Total (Allowed) Hold Time ^b	7(180)d	35(180)d	7(180)d	7(180)d	7(180)d		7(180)d
Total (Allowed) Hold Time ^c	6(26)d	15(26)d	6(26)d	7(26)d	6(26)d		6(26)d
Total (Allowed) Hold Time ^d	7(180)d	23(180)d	7(180)d	7(180)d	7(180)d		7(180)d
Total (Allowed) Hold Time ^e				40(12)d*			

- a. ICP
 b. FAAS
 c. CVAA
 d. GFAAS
 e. AS

A-23

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #6 TAG0689E01B	TSF DISPOSAL POND AUGER HOLE #6 TAG0689F01B	TSF DISPOSAL POND AUGER HOLE #7 TAG0789N01B
FIELD MEASUREMENTS			
Depth (ft)	20-22	25-27	63-64
TARGET COMPOUNDS			
Aluminum	14600	21600	14000
Antimony	0.68 BN	0.50 BN	0.51 BN
Arsenic	8.3	9.4	5.6
Barium	216	272	199
Beryllium	1.0	1.6	0.81 B
Cadmium	1.0	1.0	1.0
Calcium	78200 E	56700 E	119000 E
Chromium	39.7	49.2	29.8
Cobalt	11.5	14.7	9.3 B
Copper	21.1	29.7	24.7
Cyanide			
Iron	19800	27000	16600
Lead	20.2 N	22.0 N	13.2 N
Magnesium	14400	13800	10200 B
Manganese	447	725	1110
Mercury	---	---	0.09 B
Nickel	36.6	47.8	29.1
Potassium	3070	3660	2350
Selenium	---	0.31 BN	---
Silver	0.30 B	0.40 B	---
Sodium	493 B	543 B	523 B
Sulfide			
Thallium	---	---	---
Vanadium	55.0	65.4	36.4
Zinc	97.1	120	47.8
% Solids	85.1	81.9	77.8
Total (Allowed) Hold Time ^a	7(180)d	7(180)d	6(180)d
Total (Allowed) Hold Time ^b	7(180)d	7(180)d	6(180)d
Total (Allowed) Hold Time ^c	6(26)d	6(26)d	5(26)d
Total (Allowed) Hold Time ^d	7(180)d	7(180)d	6(180)d
Total (Allowed) Hold Time ^e			

a. ICP

b. FAAS

c. CVAAS

d. GFAAS

e. AS

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - ORGANOCHLORINE/ORGANOPHOSPHORUS PESTICIDE DATA

Page 1 of 1

AREA		TSF	
LOCATION	DISPOSAL POND	DISPOSAL POND	TSF
TYPE OF LOCATION	AUGER HOLE #4	AUGER HOLE #6	
SAMPLE NUMBER	TAG0489C01C	TAG0689C01C	
MEDIA	SOIL	SOIL	
UNITS	ug/kg	ug/kg	
SDG NUMBER	TAGE089002	TAGE089001	

FIELD MEASUREMENTS

Depth (ft) 10-12 10-12

TARGET COMPOUNDS

None Detected.

Total (Allowed) Hold Time 5(14)d 12(14)d
Dilution Factor 1.0 1.0

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - HERBICIDE DATA

AREA	TSF	TSF
LOCATION	DISPOSAL POND	DISPOSAL POND
TYPE OF LOCATION	AUGER HOLE #6	AUGER HOLE #6
SAMPLE NUMBER	TAGE0489C01C	TAGE0689C01C
MEDIA	SOIL	SOIL
UNITS	ug/kg	ug/kg
SDG NUMBER	TAGE089002	TAGE089001

FIELD MEASUREMENTS

Depth (ft)	10-12	10-12
------------	-------	-------

ANALYTICS

None detected

Total (Allowed) Hold Time	9(14)d	10(14)d
Dilution Factor	1.000	1.000

Appendix B

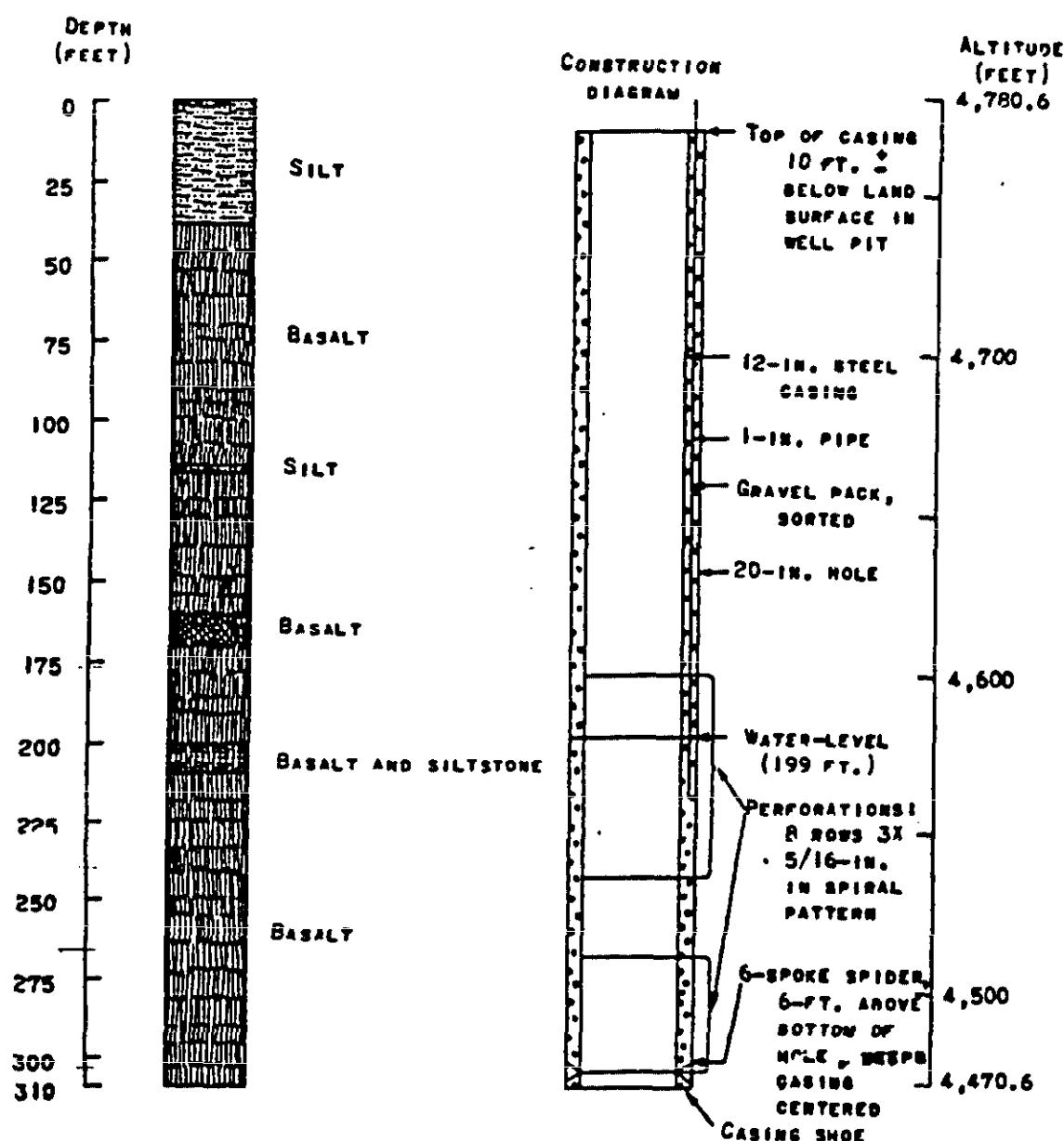
Number

APPENDIX B

UNVALIDATED ANALYTICAL DATA FOR THE TSF-05 INJECTION WELL GROUNDWATER AND SEDIMENT/SLUDGE

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

GENERALIZED GRAPHIC LOGS OF WELLS



6N-31E-13col (field no. ANP-3)

T.A.J. D. [Signature]

B-3

JULY 19, 1990

TSF0501 SLUDGE for L. FRITZ

NUCLIDE	ANALYSIS DATE	ACTIVITY +/- 1 STANDARD DEVIATION
GROSS ALPHA	JULY 17, 1990	(6 +/- 4) E+0 pCi/mL
GROSS BETA	JULY 17, 1990	(4.9 +/- 0.5) E+3 pCi/mL
TRITIUM	JULY 17, 1990	(1.03 +/- 0.03) E+3 pCi/mL
Sr-TOTAL	JULY 17, 1990	(3.1 +/- 0.3) E+2 pCi/mL

NOTE: CARBON-14 RESULTS WILL BE SENT UNDER SEPARATE COVER.

ANALYSIS BY: _____

APPROVED BY: _____

Retyped from copy of original due to poor clarity of copy. Retyped version checked for accuracy by J. R. Zimmerle, 3/23/92. JRZ

July 16, 1990
TCS-11-90
Attachment

TABLE 1
TAN SLUDGE SAMPLE TSF-0501R

COLLECTION DATES
071090 TO 071090

16-JUL-90

PAGE 1

SAMPLE ID	ESP ID	RADIONUCLIDE (GAMMA)	ACTIVITY(S) (pCi/gm)	UNCERTAINTIES (%) STATISTICAL GEOMETRY EFFICIENCY			ACTIVITY(T) (pCi/gm)
A3071290034	TSF-0501R	CO 60	(+8.12 +/- .03)E+02	0.4	50.0	5.0	(+8.12 +/- 4.1)E+02
		CS 137	(+2.34 +/- .01)E+03	0.3	50.0	5.0	(+2.34 +/- 1.2)E+03
		EU 154	(+6.62 +/- 1.1)E+00	16.6	50.0	5.0	(+6.62 +/- 3.5)E+00
		AM 241	(+2.36 +/- .53)E+01	22.3	50.0	5.0	(+2.36 +/- 1.3)E+01

NOTE: (1) ACTIVITY(S) Includes the statistical uncertainty, from counting statistics and photopeak fitting--expressed as 1 std. dev.
(2) ACTIVITY(T) Includes the total uncertainty resulting from the statistical, sample/detector geometry and efficiency. These uncertainties have been propagated in quadrature--expressed as 1 std. dev.

Retyped from copy of original document due to poor clarity of copy. Retyped version checked for accuracy by J. R. Zimmerle, 3/23/92. *JAZ*

SAMPLES SUBMITTED BY: Lori Fritz

PAGE # 1

DATE 7-20-1990

PLE NUMBER	SAMPLE DESCRIPTION	NUCLIDE	ACTIVITY
117	TSF0501R	Pu-239 *** ****Am-241 and/or Pu-238	1.22 +/- 0.03 E 1 pCi/g 4.12 +/- 0.15 E 0 pCi/g

ANALYZED BY:

Uncertainties are ONE SIGMA.

Controls for Environmental Pollution, Inc.
P.O. Box 5351 • Santa Fe, New Mexico 87502 • (505) 982-9841
FAX: (505) 982-9841 • OUT OF STATE 800/545-2188 • FAX: 505-981-39

Controls for Environmental
Pollution, Inc.
P.O. Box 5351
Santa Fe, NM 87502
Attn: James J. Mueller
Phone: (505) 982-9841

EG and G Idaho, Inc.
1955 Fremont Avenue
Idaho Falls, ID 83415

Attn: Dan R. James

Purchase Order: C-90-132804
Invoice Number:

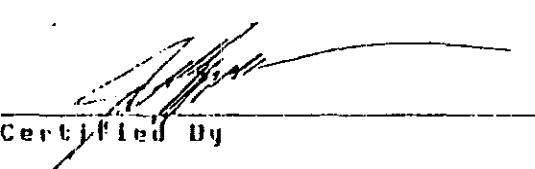
Order #: 90-00-104
Date: 08/25/90 08:56
Work ID: Organics
Date Received: 08/06/90
Date Completed: 08/25/90

SAMPLE IDENTIFICATION

<u>Sample Number</u>	<u>Sample Description</u>	<u>Sample Number</u>	<u>Sample Description</u>
01	TSF0502V	02	TSF0503V
03	TSF0504V	04	TSF0505V
05	TSF0506V	06	TSF0507V
07	TSF0508V	08	TSF0509V
09	TSF0510V	10	TSF0513V
11	TSF0514V	12	TSF0515V
13	TSF0516V	14	TSF0502V
15	BB196060-TB		

Controls for Environmental Protection, Inc.
400 University Street, Seattle, WA 98101 • OUT OF STATE 800/545-2100 • FAX 505-908-10
Order # 90-08-104 Controls for Environmental Page 2
08/25/90 08:56

Remainder of sample(s) for routine analysis will be disposed of three weeks from final report date. Sample(s) for bacteria analysis only, will be disposed of immediately after analysis. This is not applicable if other arrangements have been made.


Certified By

1. **TEST CONTROLS FOR ENVIRONMENTAL ACTION, INC.**
444 HILL COUNTRY ROAD, SUITE 100, NEW YORK, NY 10524
TELEPHONE 212/545-2100 • FAX: 505-9024

Order # 90-OB-104
08/25/90 OB: 56

Controls for Environmental

Page 3

TEST RESULTS BY SAMPLE

Sample: 01A TSF0502V

Collected: 07/10/90 10:42

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
EPA - method 8240				
Chloromethane	<0.30	0.30	mg/gram	
Bromomethane	<0.30	0.30	mg/gram	
Vinyl Chloride	<0.06	0.06	mg/gram	
Chloroethane	<0.30	0.30	mg/gram	
Methylene Chloride	<0.08	0.08	mg/gram	
Acetone	<0.30	0.30	mg/gram	
Carbon Disulfide	<0.19	0.15	mg/gram	
1,1-Dichloroethene	<0.08	0.08	mg/gram	
1,1-Dichloroethane	<0.14	0.14	mg/gram	
trans-1,2-Dichloroethane	<0.05	0.05	mg/gram	
Chloroform	<0.05	0.05	mg/gram	
1,2-Dichloroethane	<0.08	0.08	mg/gram	
2-Butanone	<0.30	0.30	mg/gram	
1,1,1-Trichloroethane	<0.11	0.11	mg/gram	
Carbon Tetrachloride	<0.08	0.08	mg/gram	
Vinyl Acetate	<0.30	0.30	mg/gram	
Bromodichloromethane	<0.07	0.07	mg/gram	
1,1,2,2-Tetrachloroethane	<0.21	0.21	mg/gram	
1,2-Dichloropropane	<0.18	0.18	mg/gram	
trans-1,3-Dichloropropene	<0.15	0.15	mg/gram	
Trichloroethene	<0.06	0.06	mg/gram	
Dibromochloromethane	<0.09	0.09	mg/gram	
1,1,2-Trichloroethane	<0.15	0.15	mg/gram	
Benzene	<0.13	0.13	mg/gram	
cis-1,3-Dichloropropene	<0.15	0.15	mg/gram	
2-Chloroethyl Vinyl Ether	<0.30	0.30	mg/gram	
Bromoform	<0.14	0.14	mg/gram	
2-Hexanone	<0.30	0.30	mg/gram	

Controls for Environmental Pollution, Inc.

OUR OFFICE 800/545-2100 • FAX 505-966

39

Order # 90-08-104
08/25/90 08:56

Controls for Environmental

Page 4

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
4-Methyl-2-Pentanone	<0.30	0.30	mg/gram		
Tetrachloroethene	0.56	0.12	mg/gram		
Toluene	<0.18	0.18	mg/gram		
Chlorobenzene	<0.18	0.18	mg/gram		
Ethyl Benzene	<0.22	0.22	mg/gram		
Styrene	<0.19	0.19	mg/gram		
Total Xylenes	<0.19	0.19	mg/gram		

Sample: 02A TSF0503V

Collected: 07/10/90 10:48

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
EPA - method 0240					
Chloromethane	<0.30	0.30	mg/gram		
Bromomethane	<0.30	0.30	mg/gram		
Vinyl Chloride	<0.06	0.06	mg/gram		
Chloroethane	<0.30	0.30	mg/gram		
Methylene Chloride	<0.08	0.08	mg/gram		
Acetone	<0.30	0.30	mg/gram		
Carbon Disulfide	<0.15	0.15	mg/gram		
1,1-Dichloroethene	<0.08	0.08	mg/gram		
1,1-Dichloroethane	<0.30	0.30	mg/gram		
trans-1,2-Dichloroethane	<0.19	0.19	mg/gram		
Chloroform	<0.08	0.08	mg/gram		
1,2-Dichloroethane	<0.14	0.14	mg/gram		
2-Butanone	<0.30	0.30	mg/gram		
1,1,1-Trichloroethane	<0.11	0.11	mg/gram		
Carbon Tetrachloride	<0.08	0.08	mg/gram		
Vinyl Acetate	<0.30	0.30	mg/gram		
Bromodichloromethane	<0.07	0.07	mg/gram		
1,1,2,2-Tetrachloroethane	<0.21	0.21	mg/gram		
1,2-Dichloropropane	<0.18	0.18	mg/gram		
trans-1,3-Dichloropropene	<0.15	0.15	mg/gram		

OF-10

Controls for Environmental Pollution, Inc.

100-190-1000-0000-0000-0000-0000-0000

DOVER STATE 800/645-2100 • FAX: 605-9112

10

Order # 90-08-104
08/25/90 08:56

Controls for Environmental

Page 5

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Trichloroethene	30.0	0.06	mg/gram		
Dibromochloromethane	<0.07	0.07	mg/gram		
1,1,2-Trichloroethane	<0.15	0.15	mg/gram		
Benzene	<0.13	0.13	mg/gram		
cis-1,3-Dichloropropene	<0.15	0.15	mg/gram		
2-Chloroethyl Vinyl Ether	<0.30	0.30	mg/gram		
Bromoform	<0.14	0.14	mg/gram		
2-Hexanone	<0.30	0.30	mg/gram		
4-Methyl-2-Pentanone	<0.30	0.30	mg/gram		
Tetrachloroethene	0.4	0.12	mg/gram		
Toluene	<0.18	0.18	mg/gram		
Chlorobenzene	<0.18	0.18	mg/gram		
Ethyl Benzene	<0.22	0.22	mg/gram		
Styrene	<0.15	0.15	mg/gram		
Total Xylenes	<0.15	0.15	mg/gram		

EPA

Sample: 03A TSF0504V

Collected: 07/10/90 11:23

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
EPA - method 8240					
Chloromethane	<0.30	0.30	mg/gram		
Bromomethane	<0.30	0.30	mg/gram		
Vinyl Chloride	<0.06	0.06	mg/gram		
Chloroethane	<0.30	0.30	mg/gram		
Methylene Chloride	<0.08	0.08	mg/gram		
Acetone	<0.30	0.30	mg/gram		
Carbon Disulfide	<0.15	0.15	mg/gram		
1,1-Dichloroethene	<0.08	0.08	mg/gram		
1,1-Dichloroethane	<0.14	0.14	mg/gram		
trans-1,2-Dichloroethane	<0.05	0.05	mg/gram		
Chloroform	<0.05	0.05	mg/gram		
1,2-Dichloroethane	<0.08	0.08	mg/gram		

Environmental Controls for Pollution, Inc.

4000 N. 10th Street • Milwaukee, WI 53209

OUT-OF-STATE 800/545-2188 • FAX 505-908

19

Order # 90-08-104
08/29/90 08:56

Controls for Environmental

Page 6

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
2-Butanone	<0.30	0.30	mg/gram		
1, 1, 1-Trichloroethane	<0.11	0.11	mg/gram		
Carbon Tetrachloride	<0.08	0.08	mg/gram		
Vinyl Acetate	<0.30	0.30	mg/gram		
Bromodichloromethane	<0.07	0.07	mg/gram		
1, 1, 2, 2-Tetrachloroethane	<0.21	0.21	mg/gram		
1, 2-Dichloropropane	<0.18	0.18	mg/gram		
trans-1,3-Dichloropropene	<0.15	0.15	mg/gram		
Trichloroethene	<23.6	0.06	mg/gram		
Dibromochloromethane	<0.09	0.09	mg/gram		
1, 1, 2-Trichloroethane	<0.15	0.15	mg/gram		
Benzene	<0.13	0.13	mg/gram		
cis-1,3-Dichloropropene	<0.15	0.15	mg/gram		
2-Chloroethyl Vinyl Ether	<0.30	0.30	mg/gram		
Bromoform	<0.14	0.14	mg/gram		
2-Hexanone	<0.30	0.30	mg/gram		
4-Methyl-2-Pentanone	<0.30	0.30	mg/gram		
Tetrachloroethene	0.24	0.12	mg/gram		
Toluene	<0.18	0.18	mg/gram		
Chlorobenzene	<0.18	0.18	mg/gram		
Ethyl Benzene	<0.22	0.22	mg/gram		
Styrene	<0.15	0.15	mg/gram		
Total Xylenes	<0.15	0.15	mg/gram		

Sample: 04A TSF0505V

Collected: 07/10/90 11:27

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
EPA - method 0240					
Chloromethane	<0.30	0.30	mg/gram		
Bromomethane	<0.30	0.30	mg/gram		
Vinyl Chloride	<0.06	0.06	mg/gram		
Chloroethane	<0.30	0.30	mg/gram		

Controls for Environmental

Order No. 90-08-104 Date Received: 08/25/90 Date Analyzed: 08/25/90

Order No. 90-08-104
08/25/90 08:56

Controls for Environmental

Page 7

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
Methylene Chloride	<0.08	0.08	mg/gram	
Acetone	<0.30	0.30	mg/gram	
Carbon Disulfide	<0.15	0.15	mg/gram	
1,1-Dichloroethene	<0.08	0.08	mg/gram	
1,1-Dichloroethane	<0.14	0.14	mg/gram	
trans-1,2-Dichloroethane	<0.09	0.09	mg/gram	
Chloroform	<0.05	0.05	mg/gram	
1,2-Dichloroethane	<0.08	0.08	mg/gram	
2-Butanone	<0.30	0.30	mg/gram	
1,1,1-Trichloroethane	<0.11	0.11	mg/gram	
Carbon Tetrachloride	<0.00	0.00	mg/gram	
Vinyl Acetate	<0.30	0.30	mg/gram	
Bromodichloromethane	<0.07	0.07	mg/gram	
1,1,2,2-Tetrachloroethane	<0.21	0.21	mg/gram	
1,2-Dichloropropane	<0.18	0.18	mg/gram	
trans-1,3-Dichloropropene	<0.15	0.15	mg/gram	
Trichloroethene	16.3	0.06	mg/gram	
Dibromochloromethane	<0.07	0.07	mg/gram	
1,1,2-Trichloroethane	<0.15	0.15	mg/gram	
Benzene	<0.13	0.13	mg/gram	
cis-1,3-Dichloropropene	<0.15	0.15	mg/gram	
2-Chloroethyl Vinyl Ether	<0.30	0.30	mg/gram	
Bromoform	<0.14	0.14	mg/gram	
2-Hexanone	<0.30	0.30	mg/gram	
4-Methyl-2-Pentanone	<0.30	0.30	mg/gram	
Tetrachloroethene	0.17	0.12	mg/gram	
Toluene	<0.18	0.18	mg/gram	
Chlorobenzene	<0.18	0.18	mg/gram	
Ethyl Benzene	<0.22	0.22	mg/gram	
Styrene	<0.15	0.15	mg/gram	
Total Xylenes	<0.15	0.15	mg/gram	

Controls for Environmental Pollutants
Environmental Protection Agency
Interagency Control Program

08/25/90 08:104
08/25/90 08:56

Controls for Environmental

Page 8

Sample: OSA TSF0506V

Collected: 07/10/90 11:37

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Dg.</u>
EPA - method 0240					
Chloromethane	<0.30	0.30	mg/gram		
Bromomethane	<0.30	0.30	mg/gram		
Vinyl Chloride	<0.06	0.06	mg/gram		
Chloroethane	<0.30	0.30	mg/gram		
Methylene Chloride	<0.08	0.08	mg/gram		
Acetone	<0.30	0.30	mg/gram		
Carbon Disulfide	<0.15	0.15	mg/gram		
1,1-Dichloroethene	<0.08	0.08	mg/gram		
1,1-Dichloroethane	<0.14	0.14	mg/gram		
trans-1,2-Dichloroethane	<0.05	0.05	mg/gram		
Chloroform	<0.05	0.05	mg/gram		
1,2-Dichloroethane	<0.08	0.08	mg/gram		
2-Butanone	<0.30	0.30	mg/gram		
1,1,1-Trichloroethane	<0.11	0.11	mg/gram		
Carbon Tetrachloride	<0.08	0.08	mg/gram		
Vinyl Acetate	<0.30	0.30	mg/gram		
Bromodichloromethane	<0.07	0.07	mg/gram		
1,1,2,2-Tetrachloroethane	<0.21	0.21	mg/gram		
1,2-Dichloropropane	<0.18	0.18	mg/gram		
trans-1,3-Dichloropropene	<0.15	0.15	mg/gram		
Trichloroethene	<0.9	0.06	mg/gram		
Dibromochloromethane	<0.07	0.07	mg/gram		
1,1,2-Trichloroethane	<0.15	0.15	mg/gram		
Benzene	<0.13	0.13	mg/gram		
cis-1,3-Dichloropropene	<0.15	0.15	mg/gram		
2-Chloroethyl Vinyl Ether	<0.30	0.30	mg/gram		
Bromoform	<0.14	0.14	mg/gram		
2-Hexanone	<0.30	0.30	mg/gram		
4-Methyl-2-Pentanone	<0.30	0.30	mg/gram		
Tetrachloroethene	<0.12	0.12	mg/gram		

B-14

O 90-08-104
08/25/90 08:56

Controls for En

WILDFIRE STATE 000/545-2100 • FAX-505-902-9
lmental Page 9

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Toluene	<0.18	0.18	mg/gram		
Chlorobenzene	<0.18	0.18	mg/gram		
Ethyl Benzene	<0.22	0.22	mg/gram		
Styrene	<0.15	0.15	mg/gram		
Total Xylenes	<0.15	0.15	mg/gram		

Sample: 06A TSF0507V

Collected: 07/10/90 13:45

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
EPA - method 8240					
Chloromethane	<0.30	0.30	mg/gram		
Bromomethane	<0.30	0.30	mg/gram		
Vinyl Chloride	<0.06	0.06	mg/gram		
Chloroethane	<0.30	0.30	mg/gram		
Methylene Chloride	<0.08	0.08	mg/gram		
Acetone	<0.30	0.30	mg/gram		
Carbon Disulfide	<0.15	0.15	mg/gram		
1,1-Dichloroethene	<0.08	0.08	mg/gram		
1,1-Dichloroethane	<0.14	0.14	mg/gram		
trans-1,2-Dichloroethane	<0.05	0.05	mg/gram		
Chloroform	<0.05	0.05	mg/gram		
1,2-Dichloroethane	<0.08	0.08	mg/gram		
2-Butanone	<0.30	0.30	mg/gram		
1,1,1-Trichloroethane	<0.11	0.11	mg/gram		
Carbon Tetrachloride	<0.08	0.08	mg/gram		
Vinyl Acetate	<0.30	0.30	mg/gram		
Bromodichloromethane	<0.07	0.07	mg/gram		
1,1,2,2-Tetrachloroethane	<0.21	0.21	mg/gram		
1,2-Dichloropropane	<0.18	0.18	mg/gram		
trans-1,3-Dichloropropene	<0.15	0.15	mg/gram		
Trichloroethene	1.6	0.06	mg/gram		
Dibromochloromethane	<0.07	0.07	mg/gram		

EPA - Test Controls for Environmental Monitoring, Inc.
 1000 University Street • Seattle, WA 98101 • (206) 783-2000 • FAX: (206) 783-2005
 DR 00-90-08-104 Controls for Environmental Monitoring Page 10
 00/25/90 08:56

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
1, 1, 2-Trichloroethane	<0.15	0.15	mg/gram	
Benzene	<0.13	0.13	mg/gram	
cis-1, 3-Dichloropropene	<0.15	0.15	mg/gram	
2-Chloroethyl Vinyl Ether	<0.30	0.30	mg/gram	
Bromoform	<0.14	0.14	mg/gram	
2-Hexanone	<0.30	0.30	mg/gram	
4-Methyl-2-Pentanone	<0.30	0.30	mg/gram	
Tetrachloroethylene	<0.12	0.12	mg/gram	
Toluene	<0.18	0.18	mg/gram	
Chlorobenzene	<0.18	0.18	mg/gram	
Ethyl Benzene	<0.22	0.22	mg/gram	
Styrene	<0.15	0.15	mg/gram	
Total Xylenes	<0.15	0.15	mg/gram	

918

Sample: 07A TSF050BV

Collected: 07/10/90 13:51

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
EPA - method B240				
Chloromethane	<0.30	0.30	mg/gram	
Bromomethane	<0.30	0.30	mg/gram	
Vinyl Chloride	<0.06	0.06	mg/gram	
Chloroethane	<0.30	0.30	mg/gram	
Methylene Chloride	<0.08	0.08	mg/gram	
Acetone	<0.30	0.30	mg/gram	
Carbon Disulfide	<0.15	0.15	mg/gram	
1, 1-Dichloroethene	<0.08	0.08	mg/gram	
1, 1-Dichloroethane	<0.14	0.14	mg/gram	
trans-1, 2-Dichloroethane	<0.05	0.05	mg/gram	
Chloroform	<0.05	0.05	mg/gram	
1, 2-Dichloroethane	<0.08	0.08	mg/gram	
2-Butanone	<0.30	0.30	mg/gram	
1, 1, 1-Trichloroethane	<0.11	0.11	mg/gram	

Test Controls for Environmental Media
and Other Substances Standardized by EPA

On 07/10/90-104
08/25/90 08:56

Controls for En.

Environmental Protection Agency
401 M STREET, SW
WASHIGTON, D.C. 20460
TELEPHONE 800/549-2100 • FAX 505-9102-9

Page 11

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
Carbon Tetrachloride	<0.08	0.08	mg/gram	
Vinyl Acetate	<0.30	0.30	mg/gram	
Bromodichloromethane	<0.07	0.07	mg/gram	
1,1,2,2-Tetrachloroethane	<0.21	0.21	mg/gram	
1,2-Dichloropropane	<0.18	0.18	mg/gram	
trans-1,3-Dichloropropene	<0.15	0.15	mg/gram	
Trichloroethylene	0.18	0.06	mg/gram	
Dibromochloromethane	<0.09	0.09	mg/gram	
1,1,2-Trichloroethane	<0.15	0.15	mg/gram	
Benzene	<0.13	0.13	mg/gram	
cis-1,3-Dichloropropene	<0.15	0.15	mg/gram	
2-Chloroethyl Vinyl Ether	<0.30	0.30	mg/gram	
Bromoform	<0.14	0.14	mg/gram	
2-Hexanone	<0.30	0.30	mg/gram	
4-Methyl-2-Pentanone	<0.30	0.30	mg/gram	
Tetrachloroethylene	<0.12	0.12	mg/gram	
Toluene	<0.18	0.18	mg/gram	
Chlorobenzene	<0.18	0.18	mg/gram	
Ethyl Benzene	<0.22	0.22	mg/gram	
Styrene	<0.15	0.15	mg/gram	
Total Xylenes	<0.15	0.15	mg/gram	

Sample: 08A TSF0509V

Collected: 07/10/90 14:26

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
EPA - method 8240				
Chloromethane	<0.30	0.30	mg/gram	
Bromomethane	<0.30	0.30	mg/gram	
Vinyl Chloride	<0.06	0.06	mg/gram	
Chloroethane	<0.30	0.30	mg/gram	
Methylene Chloride	<0.08	0.08	mg/gram	
Acetone	<0.30	0.30	mg/gram	

Dr # 90-08-104
08/25/90 08:56

Controls for En

INSTRUMENTAL 00025100-000-00000000

Instrumental

Page 12

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
Carbon Disulfide	<0.15	0.15	mg/gram	
1,1-Dichloroethene	<0.08	0.08	mg/gram	
1,1-Dichloroethane	<0.14	0.14	mg/gram	
trans-1,2-Dichloroethane	<0.05	0.05	mg/gram	
Chloroform	<0.05	0.05	mg/gram	
1,2-Dichloroethane	<0.08	0.08	mg/gram	
2-Butanone	<0.30	0.30	mg/gram	
1,1,1-Trichloroethane	<0.11	0.11	mg/gram	
Carbon Tetrachloride	<0.08	0.08	mg/gram	
Vinyl Acetate	<0.30	0.30	mg/gram	
Bromodichloromethane	<0.07	0.07	mg/gram	
1,1,2,2-Tetrachloroethane	<0.21	0.21	mg/gram	
1,2-Dichloropropane	<0.18	0.18	mg/gram	
trans-1,3-Dichloropropene	<0.15	0.15	mg/gram	
Trichloroethene	7.4	0.06	mg/gram	
Dibromochloromethane	<0.09	0.09	mg/gram	
1,1,2-Trichloroethane	<0.15	0.15	mg/gram	
Benzene	<0.13	0.13	mg/gram	
cis-1,3-Dichloropropene	<0.15	0.15	mg/gram	
2-Chloroethyl Vinyl Ether	<0.30	0.30	mg/gram	
Bromoform	<0.14	0.14	mg/gram	
2-Hexanone	<0.30	0.30	mg/gram	
4-Methyl-2-Pentanone	<0.30	0.30	mg/gram	
Tetrachloroethene	<0.12	0.12	mg/gram	
Toluene	<0.18	0.18	mg/gram	
Chlorobenzene	<0.18	0.18	mg/gram	
Ethyl Benzene	<0.22	0.22	mg/gram	
Styrene	<0.15	0.15	mg/gram	
Total Xylenes	<0.15	0.15	mg/gram	

B-18

Sample: 09A TSF0510V

Collected: 07/10/90 14:36

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
EPA - method 8240				
Chloromethane	<0.30	0.30	mg/gram	
Bromomethane	<0.30	0.30	mg/gram	
Vinyl Chloride	<0.06	0.06	mg/gram	
Chloroethane	<0.30	0.30	mg/gram	
Methylene Chloride	<0.08	0.08	mg/gram	
Acetone	<0.30	0.30	mg/gram	
Carbon Disulfide	<0.15	0.15	mg/gram	
1,1-Dichloroethene	<0.08	0.08	mg/gram	
1,1-Dichloroethane	<0.14	0.14	mg/gram	
trans-1,2-Dichloroethane	<0.05	0.05	mg/gram	
Chloroform	<0.05	0.05	mg/gram	
1,2-Dichloroethane	<0.08	0.08	mg/gram	
2-Butanone	<0.30	0.30	mg/gram	
1,1,1-Trichloroethane	<0.11	0.11	mg/gram	
Carbon Tetrachloride	<0.08	0.08	mg/gram	
Vinyl Acetate	<0.30	0.30	mg/gram	
Bromodichloromethane	<0.07	0.07	mg/gram	
1,1,2,2-Tetrachloroethane	<0.21	0.21	mg/gram	
1,2-Dichloropropane	<0.18	0.18	mg/gram	
trans-1,3-Dichloropropene	<0.15	0.15	mg/gram	
Trichloroethene	7.5	0.19	mg/gram	
Dibromochloromethane	<0.07	0.09	mg/gram	
1,1,2-Trichloroethane	<0.15	0.15	mg/gram	
Benzene	<0.13	0.13	mg/gram	
cis-1,3-Dichloropropene	<0.15	0.15	mg/gram	
2-Chloroethyl Vinyl Ether	<0.30	0.30	mg/gram	
Dromoform	<0.14	0.14	mg/gram	
2-Hexanone	<0.30	0.30	mg/gram	
4-Methyl-2-Pentanone	<0.30	0.30	mg/gram	
Tetrachloroethene	<0.12	0.12	mg/gram	

Controls for Environmental Pollution
Environmental Test Laboratory

700, Inc.

10000 Saticoy Street • Suite 2100 • telephone 800/545-2100 • FAX - 505-902-9111

01 09 90-OB-104
 08/25/90 08:56

Controls for Environmental

Environmental

Page 14

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
Toluene	<0.18	0.18	mg/gram	
Chlorobenzene	<0.18	0.18	mg/gram	
Ethyl Benzene	<0.22	0.22	mg/gram	
Styrene	<0.15	0.15	mg/gram	
Total Xylenes	<0.15	0.15	mg/gram	

Sample: 10A TSF0513V

Collected: 07/10/90 14:58

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
EPA - method 8240				
Chloromethane	<0.30	0.30	mg/gram	
Bromomethane	<0.30	0.30	mg/gram	
Vinyl Chloride	<0.06	0.06	mg/gram	
Chloroethane	<0.30	0.30	mg/gram	
Methylene Chloride	<0.08	0.08	mg/gram	
Acetone	<0.30	0.30	mg/gram	
Carbon Disulfide	<0.15	0.15	mg/gram	
1,1-Dichloroethene	<0.08	0.08	mg/gram	
1,1-Dichloroethane	<0.14	0.14	mg/gram	
trans-1,2-Dichloroethane	<0.05	0.05	mg/gram	
Chloroform	<0.05	0.05	mg/gram	
1,2-Dichloroethane	<0.08	0.08	mg/gram	
2-Butanone	<0.30	0.30	mg/gram	
1,1,1-Trichloroethane	<0.11	0.11	mg/gram	
Carbon Tetrachloride	<0.08	0.08	mg/gram	
Vinyl Acetate	<0.30	0.30	mg/gram	
Bromodichloromethane	<0.07	0.07	mg/gram	
1,1,2,2-Tetrachloroethane	<0.21	0.21	mg/gram	
1,2-Dichloropropane	<0.18	0.18	mg/gram	
trans-1,3-Dichloropropene	<0.15	0.15	mg/gram	
Trichloroethene	1.6	0.19	mg/gram	
Dibromochloromethane	<0.09	0.09	mg/gram	

B-20

8-21 Controls for Environmental Pollutants
Sample ID: TSF0514V Date Collected: 08/25/90
08-90-08-104 Controls for Environmental Pollutants
08/25/90 08:56

08-90-08-104
TSF0514V 000/545-2108 • FAX-505-9026

Environmental Page 15

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
1,1,2-Trichloroethane	<0.15	0.15	mg/gram	
Benzene	<0.13	0.13	mg/gram	
cis-1,3-Dichloropropene	<0.15	0.15	mg/gram	
2-Chloroethyl Vinyl Ether	<0.30	0.30	mg/gram	
Dromoform	<0.14	0.14	mg/gram	
2-Hexanone	<0.30	0.30	mg/gram	
4-Methyl-2-Pentanone	<0.30	0.30	mg/gram	
Tetrachloroethylene	1.3	0.12	mg/gram	
Toluene	<0.18	0.18	mg/gram	
Chlorobenzene	<0.18	0.18	mg/gram	
Ethyl Benzene	<0.22	0.22	mg/gram	
Styrene	<0.15	0.15	mg/gram	
Total Xylenes	<0.15	0.15	mg/gram	

Sample: 11A TSF0514V

Collected: 07/10/90 15:22

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
EPA - method 8240				
Chloromethane	<0.30	0.30	mg/gram	
Bromomethane	<0.30	0.30	mg/gram	
Vinyl Chloride	<0.06	0.06	mg/gram	
Chloroethane	<0.30	0.30	mg/gram	
Methylene Chloride	<0.08	0.08	mg/gram	
Acetone	<0.30	0.30	mg/gram	
Carbon Disulfide	<0.15	0.15	mg/gram	
1,1-Dichloroethene	<0.08	0.08	mg/gram	
1,1-Dichloroethane	<0.14	0.14	mg/gram	
trans-1,2-Dichloroethane	0.41	0.05	mg/gram	
Chloroform	<0.05	0.05	mg/gram	
1,2-Dichloroethane	<0.08	0.08	mg/gram	
2-Butanone	<0.30	0.30	mg/gram	
1,1,1-Trichloroethane	<0.11	0.11	mg/gram	

Controls for E

90-08-104
08/25/90 08:56

Controls for E

BUREAU OF ENVIRONMENTAL MONITORING

Page 16

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
Carbon Tetrachloride	<0.08	0.08	mg/gram	
Vinyl Acetate	<0.30	0.30	mg/gram	
Dromodichloromethane	<0.07	0.07	mg/gram	
1,1,2,2-Tetrachloroethane	<0.21	0.21	mg/gram	
1,2-Dichloropropane	<0.18	0.18	mg/gram	
trans-1,3-Dichloropropene	<0.15	0.15	mg/gram	
Trichloroethene	0.92	0.19	mg/gram	
Dibromochloromethane	<0.09	0.09	mg/gram	
1,1,2-Trichloroethane	<0.15	0.15	mg/gram	
Benzene	<0.13	0.13	mg/gram	
cis-1,3-Dichloropropene	<0.15	0.15	mg/gram	
2-Chloroethyl Vinyl Ether	<0.30	0.30	mg/gram	
Bromoform	<0.14	0.14	mg/gram	
2-Hexanone	<0.30	0.30	mg/gram	
4-Methyl-2-Pentanone	<0.30	0.30	mg/gram	
Tetrachloroethene	<0.12	0.12	mg/gram	
Toluene	<0.18	0.18	mg/gram	
Chlorobenzene	<0.18	0.18	mg/gram	
Ethyl Benzene	<0.22	0.22	mg/gram	
Styrene	<0.15	0.15	mg/gram	
Total Xylenes	<0.15	0.15	mg/gram	

B-22

Sample: 12A TSF0515V

Collected: 07/10/90 15:27

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
EPA - method 0240				
Chloromethane	<0.30	0.30	mg/gram	
Bromomethane	<0.30	0.30	mg/gram	
Vinyl Chloride	<0.06	0.06	mg/gram	
Chloroethane	<0.30	0.30	mg/gram	
Methylene Chloride	<0.08	0.08	mg/gram	
Acetone	<0.30	0.30	mg/gram	

Controls for E_t

Page 17

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
Carbon Disulfide	<0.15	0.15	mg/gram	
1, 1-Dichloroethene	<0.08	0.08	mg/gram	
1, 1-Dichloroethane	<0.14	0.14	mg/gram	
trans-1, 2-Dichloroethane	0.05	0.05	mg/gram	
Chloroform	<0.05	0.05	mg/gram	
1, 2-Dichloroethane	<0.08	0.08	mg/gram	
2-Butanone	<0.30	0.30	mg/gram	
1, 1, 1-Trichloroethane	<0.11	0.11	mg/gram	
Carbon Tetrachloride	<0.08	0.08	mg/gram	
Vinyl Acetate	<0.30	0.30	mg/gram	
Bromodichloromethane	<0.07	0.07	mg/gram	
1, 1, 2, 2-Tetrachloroethane	<0.21	0.21	mg/gram	
1, 2-Dichloropropane	<0.18	0.18	mg/gram	
trans-1, 3-Dichloropropene	<0.15	0.15	mg/gram	
Trichloroethene	1.0	0.19	mg/gram	
Dibromochloromethane	<0.09	0.09	mg/gram	
1, 1, 2-Trichloroethane	<0.15	0.15	mg/gram	
Benzene	<0.13	0.13	mg/gram	
cis-1, 3-Dichloropropene	<0.15	0.15	mg/gram	
2-Chloroethyl Vinyl Ether	<0.30	0.30	mg/gram	
Dromoform	<0.14	0.14	mg/gram	
2-Hexanone	<0.30	0.30	mg/gram	
4-Methyl-2-Pentanone	<0.30	<0.30	mg/gram	
Tetrachloroethene	1.1	0.12	mg/gram	
Toluene	<0.18	0.18	mg/gram	
Chlorobenzene	<0.18	0.18	mg/gram	
Ethyl Benzene	<0.22	0.22	mg/gram	
Styrene	<0.15	0.15	mg/gram	
Total Xylenes	<0.15	<0.15	mg/gram	

01 90-08-104
08/25/90 08:56

Controls for En

DO NOT DESTROY URGENT 0007546-2100 • Doc-505-512-1
Final Page 18

Page 18

Sample: 13A TSF0516V

Collected: 07/10/90 15:02

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
EPA - method 8240				
Chloromethane	<0.30	0.30	mg/gram	
Bromomethane	<0.30	0.30	mg/gram	
Vinyl Chloride	<0.06	0.06	mg/gram	
Chloroethane	<0.30	0.30	mg/gram	
Methylene Chloride	<0.08	0.08	mg/gram	
Acetone	<0.30	0.30	mg/gram	
Carbon Disulfide	<0.15	0.15	mg/gram	
1,1-Dichloroethene	<0.08	0.08	mg/gram	
1,1-Dichloroethane	<0.14	0.14	mg/gram	
trans-1,2-Dichloroethane	<0.05	0.05	mg/gram	
Chloroform	<0.05	0.05	mg/gram	
1,2-Dichloroethane	<0.08	0.08	mg/gram	
2-Butanone	<0.30	0.30	mg/gram	
1,1,1-Trichloroethane	<0.11	0.11	mg/gram	
Carbon Tetrachloride	<0.08	0.08	mg/gram	
Vinyl Acetate	<0.30	0.30	mg/gram	
Bromodichloromethane	<0.07	0.07	mg/gram	
1,1,2,2-Tetrachloroethane	<0.21	0.21	mg/gram	
1,2-Dichloropropane	<0.18	0.18	mg/gram	
trans-1,3-Dichloropropene	<0.15	0.15	mg/gram	
Trichloroethene	0.3	0.19	mg/gram	
Dibromochloromethane	<0.09	0.09	mg/gram	
1,1,2-Trichloroethane	<0.15	0.15	mg/gram	
Benzene	<0.13	0.13	mg/gram	
cis-1,3-Dichloropropene	<0.15	0.15	mg/gram	
2-Chloroethyl Vinyl Ether	<0.30	0.30	mg/gram	
Bromoform	<0.14	0.14	mg/gram	
2-Hexanone	<0.30	0.30	mg/gram	
4-Methyl-2-Pentanone	<0.30	0.30	mg/gram	
Tetrachloroethene	0.3	0.12	mg/gram	

24

L 11 90-08-104
08/25/90 08:56

Controls for Environmental

08/25/90 08:56 TSF0502V
Page 17

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Dq</u>
Toluene	<0.18	0.18	mg/gram		
Chlorobenzene	<0.18	0.18	mg/gram		
Ethyl Benzene	<0.22	0.22	mg/gram		
Styrene	<0.15	0.15	mg/gram		
Total Xylenes	<0.15	0.15	mg/gram		

Sample: 14A TSF0502V

Collected: 07/10/90 10:33

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Dq</u>
EPA - method 8240					
Chloromethane	<0.30	0.30	mg/gram		
Bromomethane	<0.30	0.30	mg/gram		
Vinyl Chloride	<0.06	0.06	mg/gram		
Chloroethane	<0.30	0.30	mg/gram		
Methylene Chloride	<0.08	0.08	mg/gram		
Acetone	<0.30	0.30	mg/gram		
Carbon Disulfide	<0.15	0.15	mg/gram		
1,1-Dichloroethene	<0.08	0.08	mg/gram		
1,1-Dichloroethane	<0.14	0.14	mg/gram		
trans-1,2-Dichloroethane	<0.09	0.05	mg/gram		
Chloroform	<0.05	0.05	mg/gram		
1,2-Dichloroethane	<0.08	0.08	mg/gram		
2-Butanone	<0.30	0.30	mg/gram		
1,1,1-Trichloroethane	<0.11	0.11	mg/gram		
Carbon Tetrachloride	<0.08	0.08	mg/gram		
Vinyl Acetate	<0.30	0.30	mg/gram		
Dromodichloromethane	<0.07	0.07	mg/gram		
1,1,2,2-Tetrachloroethane	<0.21	0.21	mg/gram		
1,2-Dichloropropane	<0.18	0.18	mg/gram		
trans-1,3-Dichloropropene	<0.15	0.15	mg/gram		
Trichloroethene	2.7	0.17	mg/gram		
Dibromochloromethane	<0.09	0.09	mg/gram		

Controls for Environmental Quality
Public Health Standards, 11/20/87

O. # 90-08-104
08/25/90 08:56

Controls for En

08/25/90 08:56:00 • FAX-SOS-trns

vironmental

Page 20

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
1, 1, 2-Trichloroethane	<0.15	0.15	mg/gram	
Benzene	<0.13	0.13	mg/gram	
cis-1,3-Dichloropropene	<0.15	0.15	mg/gram	
2-Chloroethyl Vinyl Ether	<0.30	0.30	mg/gram	
Bromoform	<0.14	0.14	mg/gram	
2-Hexanone	<0.30	0.30	mg/gram	
4-Methyl-2-Pentanone	<0.30	0.30	mg/gram	
Tetrachloroethene	2.8	0.12	mg/gram	
Toluene	<0.18	0.18	mg/gram	
Chlorobenzene	<0.18	0.18	mg/gram	
Ethyl Benzene	<0.22	0.22	mg/gram	
Styrene	<0.15	0.15	mg/gram	
Total Xylenes	<0.15	0.15	mg/gram	

92

Sample: 15A BB196060-TB

Collected:

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
EPA - method 8240				
Chloromethane	<10.0	10.0	ug/liter	
Bromomethane	<10.0	10.0	ug/liter	
Vinyl Chloride	<2.0	2.00	ug/liter	
Chloroethane	<10.0	10.0	ug/liter	
Methylene Chloride	<2.8	2.80	ug/liter	
Acetone	<10.0	10.0	ug/liter	
Carbon Disulfide	<5.0	5.00	ug/liter	
1, 1-Dichloroethene	<2.8	2.80	ug/liter	
1, 1-Dichloroethane	<4.7	4.70	ug/liter	
trans-1,2-Dichloroethane	<1.6	1.60	ug/liter	
Chloroform	<1.6	1.60	ug/liter	
1, 2-Dichloroethane	<2.8	2.80	ug/liter	
2-Butanone	<10.0	10.0	ug/liter	
1, 1, 1-Trichloroethane	<3.8	3.80	ug/liter	

O II 90-08-104
08/25/90 00:56

Controls for En

nvironmental

Page 21

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed By</u>
Carbon Tetrachloride	<2.8	2.80	ug/liter	
Vinyl Acetate	<10.0	10.0	ug/liter	
Bromodichloromethane	<2.2	2.20	ug/liter	
1,1,2,2-Tetrachloroethane	<6.9	6.90	ug/liter	
1,2-Dichloropropane	<6.0	6.00	ug/liter	
trans-1,3-Dichloropropene	<5.0	5.00	ug/liter	
Trichloroethene	<1.9	1.90	ug/liter	
Dibromochloromethane	<3.1	3.10	ug/liter	
1,1,2-Trichloroethane	<5.0	5.00	ug/liter	
Benzene	<4.4	4.40	ug/liter	
cis-1,3-Dichloropropene	<9.0	5.00	ug/liter	
2-Chloroethyl Vinyl Ether	<10.0	10.0	ug/liter	
Bromoform	<4.7	4.70	ug/liter	
2-Hexanone	<10.0	10.0	ug/liter	
4-Methyl-2-Pentanone	<10.0	10.0	ug/liter	
Tetrachloroethene	<4.1	4.10	ug/liter	
Toluene	<6.0	6.00	ug/liter	
Chlorobenzene	<6.0	6.00	ug/liter	
Ethyl Benzene	<7.2	7.20	ug/liter	
Styrene	<5.0	5.00	ug/liter	
Total Xylenes	<5.0	5.00	ug/liter	

Controls for Environmental Protection
Environmental Quality Control Laboratory Division of EG&G

EG and G Idaho, Inc.
OUT OF STATE 800/545-2188 • FAX - 605-902

EG and G Idaho, Inc.
1955 Fremont Avenue
Idaho Falls, ID 83415

Date Received: 08/06/90
Date Reported: 08/25/90
Work Order: 90-08-103
Category: RUSH_TCLP

Attn: Dan R. James

Work ID: Water Quality & Organics
P.O. #: C-90-132804

B-28

Test	TSF0501C	TSF0504C	TSF0507C	TSF0509C
Units	07/10/90 10:53	07/10/90 11:56	07/10/90 14:07	07/10/90 14:50
BTU	*	*	*	*
Corrosivity (pH)	8.11	8.05	8.31	8.11
Total Halogen Sulfur	2410	2000	4340	1330
Mercury (total)	17.0	101.1	23.4	12.8
Ignitability	>90	>90	>90	>90
Lead (total)	160	130	180	100
Reactivity (Cyanide)	<3.1	<3.1	<31.3	<3.1
Reactivity (Sulfide)	<2.5	<2.5	<2.5	<2.5

Controls for Environmental Performance
Environmental Protection Services, Inc.

CEP, Inc.
401 STATE STREET • BOSTON, MASSACHUSETTS 02108
617/545-2100 • FAX: 505-9821

Page 2
Received: 08/06/90

CEP, Inc.
08/25/90 09:11:18

REPORT
Work Order # 90-08-103
Continued From Above

Test	Units	TSF0501C	TSF0504C	TSF0507C	TSF0509C
		07/10/90 10:53	07/10/90 11:56	07/10/90 14:07	07/10/90 14:50

Reactivity	mg/kg	**	**	**	**
------------	-------	----	----	----	----

Test	Units	TSF0513C	TSF0514C
		07/10/90 15:13	07/10/90 15:34
BTU	BTU/16	*	*

Corrosivity (pH)	units	8.11	8.00
------------------	-------	------	------

Total Halogen Sulfur	ug/gram	2230	1960
----------------------	---------	------	------

Mercury (total)	ug/gram	14.9	25.5
-----------------	---------	------	------

Ignitability	Degrees C	390	390
--------------	-----------	-----	-----

Lead (total)	ug/gram	110	110
--------------	---------	-----	-----

B-29



Controls for Environmental Protection
Environmental Control Systems Division

Division, Inc.

OUT OF STATE 800/645-2188 • FAX - 505-902

Page 3
Received: 08/06/90

CEP, Inc. REPORT
08/25/90 09:11:18

Work Order # 90-08-103
Continued From Above

Test

Units

Reactivity (Cyanide)
mg/kg
Reactivity (Sulfide)
mg/kg
Reactivity
mg/kg

TSF0513C TSF0514C

07/10/90 15:13 07/10/90 15:34

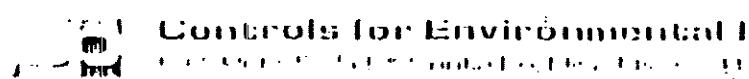
<3.1 <31.3

<2.5 <2.5

** **

* Didn't Ignite
** Non Reactive

Certified By:



Controls for Environmental Protection

CEP, Inc.

OUT OF STATE 800/545-2100 • FAX 505-981

Page 4
Received: 08/06/90CEP, Inc. REPORT
Results by Sample

SAMPLE ID TSF0501C

FRACTION: 01C TEST CODE TCLP NAME TCLP Metals
Date & Time Collected 07/10/90 10:53:00 Category SLUDGE

TCLP Metals	Detection Limit mg/L	RESULT
Arsenic	0.01	0.01
Barium	0.1	1.6
Cadmium	0.001	0.1
Chromium	0.01	0.20
Lead	0.01	0.2
Mercury	0.0004	<0.0004
Selenium	0.01	<0.01
Silver	0.01	0.03

B-31

All results reported in:

UNITS mg/liter

Page 5
Received: 08/06/90

CEP, Inc. REPORT
Results by Sample

Work Order # 70-08-103

SAMPLE ID TSF0501C

FRACTION 01B TEST CODE TCLP NAME TCLP Organics

Date & Time Collected 07/10/90 10:53:00 Category SLUDGE

PARAMETER	RESULT	LIMIT
Bis(2-chloroethyl)ether	<0.015	0.015
O-cresol	<0.025	0.025
M-cresol	<0.025	0.025
P-cresol	<0.025	0.025
Pentachlorophenol	<0.010	0.010
Phenol	<0.005	0.005
2,3,4,6-Tetrachlorophenol	<0.005	0.005
2,4,5-Trichlorophenol	<0.013	0.013
2,4,6-Trichlorophenol	<0.008	0.008
2,4-Dinitrotoluene	<0.015	0.015
Hexachlorobenzene	<0.005	0.005
Hexachlorobutadiene	<0.003	0.003
Hexachloroethane	<0.005	0.005
Nitrobenzene	<0.005	0.005
Chlordane	<0.004	0.004
Endrin	<0.001	0.001
Heptachlor	<0.001	0.001
Lindane	<0.001	0.001
Methoxychlor	<0.001	0.001
Toxaphene	<0.004	0.004
2,4-D	<0.003	0.003
Silvex	<0.003	0.003
1,2-Dichlorobenzene	<0.05	0.05
1,4-Dichlorobenzene	<0.01	0.01

Notes and Definitions for this Report:

UNITS mg/liter

Controls for Environmental Data

CEP, Inc.

OUT OF STATE 800/545-2180 • FAX - 505-902

Page 6
Received: 08/06/90CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-103

SAMPLE ID TSF0501C

FRACTION 01A TEST CODE ZHE NAME Zero Head Space Extract
Date & Time Collected 07/10/90 10:53:00 Category SLUDGE

PARAMETER	RESULT	LIMIT
Acetonitrile	<100	100
Benzene	<44	44
Carbon Disulfide	<100	100
Carbon Tetrachloride	<28	28
Chlorobenzene	<60	60
Chloroform	<16	16
1, 2-Dichloroethane	<28	28
1, 1-Dichloroethylene	20.8	16
Isobutanol	<100	100
Methylene Chloride	46.9	28
Methylethyl Ketone	<100	100
Pyridine	<100	100
1, 1, 1, 2-Tetrachloroethane	<100	100
1, 1, 2, 2-Tetrachloroethane	<69	69
Tetrachloroethylene	860.0	41
Toluene	<60	60
1, 1, 1-Trichloroethane	21.3	38
1, 1, 2-Trichloroethane	<50	50
Trichloroethylene	12000.0	19
Vinyl Chloride	<20	20

B-33

Notes and Definitions for this Report:

UNITS ug/liter

CEP Controls for Environmental Protection, Inc.
4000 E. 110th Street • Indianapolis, Indiana 46290
OUTOFFSTATE 800/545-2100 • FAX 505-9071

Page 7
Received: 08/06/90

CEP, Inc. REPORT
Results by Sample

SAMPLE ID TSF0504C

FRACTION 02C TEST CODE TCLP NAME TCLP Metals
Date & Time Collected 07/10/90 11:56:00 Category SLUDGE

TCLP Metals	Detection Limit mg/L	RESULT
Arsenic	0. 01	<u>0. 03</u>
Barium	0. 1	<u>0. 6</u>
Cadmium	0. 001	<u><0. 1</u>
Chromium	0. 01	<u>0. 10</u>
Lead	0. 01	<u>0. 2</u>
Mercury	0. 0004	<u><0. 0004</u>
Selenium	0. 01	<u><0. 01</u>
Silver	0. 01	<u>0. 03</u>

B-34

All results reported in:

UNITS mg/liter

Page 8
Received: 08/06/90

CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-103

SAMPLE ID TSF0504C

FRACTION 02B TEST CODE TCLP 0 NAME TCLP Organics

Date & Time Collected 07/10/90 11:56:00 Category SLUDGE

PARAMETER	RESULT	LIMIT
Bis(2-chloroethyl)ether	<0.03	0.03
O-cresol	<0.06	0.06
M-cresol	<0.06	0.06
P-cresol	<0.06	0.06
Pentachlorophenol	<0.02	0.02
Phenol	<0.01	0.01
2,3,4,6-Tetrachlorophenol	<0.01	0.01
2,4,5-Trichlorophenol	<0.03	0.03
2,4,6-Trichlorophenol	<0.02	0.02
2,4-Dinitrotoluene	<0.03	0.03
Hexachlorobenzene	<0.01	0.01
Hexachlorobutadiene	<0.005	0.005
Hexachloroethane	<0.01	0.01
Nitrobenzene	<0.01	0.01
Chlordane	<0.004	0.004
Endrin	<0.001	0.001
Heptachlor	<0.001	0.001
Lindane	<0.001	0.001
Methoxychlor	<0.001	0.001
Toxaphene	<0.004	0.004
2,4-D	<0.006	0.006
Silvex	<0.006	0.006
1,2-Dichlorobenzene	<0.11	0.11
1,4-Dichlorobenzene	<0.02	0.02

Notes and Definitions for this Report:

UNITS mg/liter

Page 9
Received: 08/06/90

CEP, Inc. REPORT
Results by Sample

SAMPLE ID TSF0504C

FRACTION 02A TEST CODE ZHE NAME Zero Head Space Extract
Date & Time Collected 07/10/90 11:56:00 Category SLUDGE

PARAMETER	RESULT	LIMIT
Acronitrile	<100	100
Benzene	<44	44
Carbon Disulfide	<100	100
Carbon Tetrachloride	<20	20
Chlorobenzene	<60	60
Chloroform	36.8	16
1,2-Dichloroethane	<20	20
1,1-Dichloroethylene	<16	16
Isobutanol	<100	100
Methylene Chloride	200.0	20
Methylethyl Ketone	<100	100
Pyridine	<100	100
1,1,1,2-Tetrachloroethane	<100	100
1,1,2,2-Tetrachloroethane	<67	67
Tetrachloroethylene	460.0	41
Toluene	<60	60
1,1,1-Trichloroethane	<38	38
1,1,2-Trichloroethane	<50	50
Trichloroethylene	11000.0	19
Vinyl Chloride	<20	20

Notes and Definitions for this Report:

UNITS ug/liter

Page 10
Received: 08/06/90

CEP, Inc. REPORT Work Order # 90-08-103
Results by Sample

SAMPLE ID TSF0507C

FRACTION 03C TEST CODE TCLP NAME TCLP Metals
Date & Time Collected 07/10/90 14:07:00 Category SLUDGE

TCLP Metals	Detection Limit mg/L	RESULT
Arsenic	0. 01	***
Barium	0. 1	***
Cadmium	0. 001	***
Chromium	0. 01	***
Lead	0. 01	***
Mercury	0. 0004	***
Selenium	0. 01	***
Silver	0. 01	***

B-37

All results reported in:

UNITS mg/liter

Page 11
Received: 08/06/90

CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-103

SAMPLE ID TSF0507C

FRACTION 03B TEST CODE TCLP 0 NAME TCLP Organics

Date & Time Collected 07/10/90 14:07:00 Category SLUDGE

PARAMETER	RESULT	LIMIT
Bis(2-chloroethyl)ether	<0.04	0.04
O-cresol	<0.07	0.07
M-cresol	<0.07	0.07
P-cresol	<0.07	0.07
Pentachlorophenol	<0.03	0.03
Phenol	<0.01	0.01
2, 3, 4, 6-Tetrachlorophenol	<0.01	0.01
2, 4, 5-Trichlorophenol	<0.03	0.03
2, 4, 6-Trichlorophenol	<0.02	0.02
2, 4-Dinitrotoluene	<0.04	0.04
Hexachlorobenzene	<0.01	0.01
Hexachlorobutadiene	<0.005	0.005
Hexachloroethane	<0.01	0.01
Nitrobenzene	<0.01	0.01
Chlordane	<0.004	0.004
Endrin	<0.001	0.001
Heptachlor	<0.001	0.001
Lindane	<0.001	0.001
Methoxychlor	<0.001	0.001
Toxaphene	<0.004	0.004
2, 4-D	<0.007	0.007
Silvex	<0.007	0.007
1, 2-Dichlorobenzene	<0.13	0.13
1, 4-Dichlorobenzene	<0.03	0.03

Notes and Definitions for this Report:

UNITS — mg/liter

Page 12
Received: 08/06/90

CEP, Inc.

REPORT
Results by Sample

Work Order # 90-08-103

SAMPLE ID TSF0507C

FRACTION 03A TEST CODE ZHE NAME Zero Head Space Extract
Date & Time Collected 07/10/90 14:07:00 Category SLUDGE

PARAMETER	RESULT	LIMIT
Acetonitrile	<100	100
Benzene	<44	44
Carbon Disulfide	<100	100
Carbon Tetrachloride	<28	28
Chlorobenzene	<60	60
Chloroform	<16	16
1,2-Dichloroethane	<28	28
1,1-Dichloroethylene	<16	16
Isobutanol	<100	100
Methylene Chloride	150.0	28
Methylethyl Ketone	<100	100
Pyridine	<100	100
1,1,1,2-Tetrachloroethane	<100	100
1,1,2,2-Tetrachloroethane	<69	69
Tetrachloroethylene	190.0	41
Toluene	<60	60
1,1,1-Trichloroethane	<38	38
1,1,2-Trichloroethane	<50	50
Trichloroethylene	11000.0	19
Vinyl Chloride	<20	20

Notes and Definitions for this Report:

UNITS ug/liter

Controls for Environmental Protection, Inc.
4000 Madeline, Suite 100 • St. Paul, MN 55116
(612) 822-1000 • FAX: (612) 822-1001

4000 Madeline, Suite 100 • St. Paul, MN 55116
(612) 822-1000 • FAX: (612) 822-1001

Page 13 Work Order # 90-08-103
Received: 08/06/90 REPORT

CEP, Inc.
Results by Sample

SAMPLE ID 15F0509C FRACTION OAC TEST CODE TCLP
Date & Time Collected 07/10/90 14:50:00 NAME TCLP Metals
Category SLUDGE

TCLP Metals	Detection Limit mg/L	RESULT
Arsenic	0. 01	0. 02
Barium	0. 1	1. 1
Cadmium	0. 001	0. 1
Chromium	0. 01	0. 15
Lead	0. 01	0. 2
Mercury	0. 0001	<0. 0004
Selenium	0. 01	<0. 01
Silver	0. 01	0. 01

All results reported in:

UNITS — mg/liter

Page 14
Received: 08/06/90

**CEP, Inc. REPORT
Results by Sample**

Work Order # 90-00-103

SAMPLE ID TSF0509C

FRACTION QAB TEST CODE TCLP D NAME TCLP Organics

Date & Time Collected 07/10/90 14:50:00 Category SLUDGE

PARAMETER	RESULT	LIMIT
Bis(2-chloroethyl)ether	<0.02	0.02
O-cresol	<0.03	0.03
M-cresol	<0.03	0.03
P-cresol	<0.03	0.03
Pentachlorophenol	<0.01	0.01
Phenol	<0.005	0.005
2,3,4,6-Tetrachlorophenol	<0.005	0.005
2,4,5-Trichlorophenol	<0.005	0.005
2,4,6-Trichlorophenol	<0.008	0.008
2,4-Dinitrotoluene	<0.016	0.016
Hexachlorobenzene	<0.005	0.005
Hexachlorobutadiene	<0.003	0.003
Hexachloroethane	<0.005	0.005
Nitrobenzene	<0.005	0.005
Chlordane	<0.004	0.004
Endrin	<0.001	0.001
Heptachlor	<0.001	0.001
Lindane	<0.001	0.001
Methoxychlor	<0.001	0.001
Toxaphene	<0.004	0.004
2,4-D	<0.003	0.003
Silvex	<0.003	0.003
1,2-Dichlorobenzene	<0.05	0.05
1,4-Dichlorobenzene	<0.01	0.01

Notes and Definitions for this Report:

UNITS mg/liter

Page 15
Received: 08/06/90

CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-103

SAMPLE ID TSF0509C

FRACTION 04A TEST CODE ZHE NAME Zero Head Space Extract
Date & Time Collected 07/10/90 14:50:00 Category SLUDGE

PARAMETER	RESULT	LIMIT
Acetonitrile	<100	100
Benzene	<44	44
Carbon Disulfide	<100	100
Carbon Tetrachloride	<28	28
Chlorobenzene	<60	60
Chloroform	<16	16
1,2-Dichloroethane	<28	28
1,1-Dichloroethylene	<16	16
Isobutanol	<100	100
Methylene Chloride	<28	28
Methylethyl Ketone	<100	100
Pyridine	<100	100
1,1,1,2-Tetrachloroethane	<100	100
1,1,2,2-Tetrachloroethane	<69	69
Tetrachloroethylene	830.0	41
Toluene	<60	60
1,1,1-Trichloroethane	<38	38
1,1,2-Trichloroethane	<50	50
Trichloroethylene	9100.0	19
Vinyl Chloride	<20	20

Notes and Definitions for this Report:

UNITS ug/liter

Page 16
Received: 08/06/90

CEP, Inc. REPORT
Results by Sample

SAMPLE ID TSF0513C

FRACTION 05C TEST CODE TCLP NAME TCLP Metals
Date & Time Collected 07/10/90 15:13:00 Category SLUDGE

TCLP Metals	Detection Limit mg/L	RESULT
Arsenic	0.01	###
Barium	0.1	###
Cadmium	0.001	###
Chromium	0.01	###
Lead	0.01	###
Mercury	0.0004	###
Selenium	0.01	###
Silver	0.01	###

B-43

All results reported in:

UNITS mg/liter

Page 17
Received: 08/06/90

CEP, Inc. REPORT
Results by Sample

SAMPLE ID TSF0513C

FRACTION Q5B TEST CODE TCLP NAME TCLP Organics
Date & Time Collected 07/10/90 15:13:00 Category SLUDGE

PARAMETER	RESULT	LIMIT
Bis(2-chloroethyl)ether	<0.04	0.04
O-cresol	<0.06	0.06
M-cresol	<0.06	0.06
P-cresol	<0.06	0.06
Pentachlorophenol	<0.02	0.02
Phenol	<0.01	0.01
2,3,4,6-Tetrachlorophenol	<0.01	0.01
2,4,5-Trichlorophenol	<0.03	0.03
2,4,6-Trichlorophenol	<0.02	0.02
2,4-Dinitrotoluene	<0.04	0.04
Hexachlorobenzene	<0.01	0.01
Hexachlorobutadiene	<0.005	0.005
Hexachloroethane	<0.01	0.01
Nitrobenzene	<0.01	0.01
Chlordane	<0.004	0.004
Endrin	<0.001	0.001
Heptachlor	<0.001	0.001
Lindane	<0.001	0.001
Methoxychlor	<0.001	0.001
Toxaphene	<0.004	0.004
2,4-D	<0.006	0.006
Silvex	<0.006	0.006
1,2-Dichlorobenzene	<0.12	0.12
1,4-Dichlorobenzene	<0.02	0.02

Notes and Definitions for this Report:

UNITS — mg/liter

Environmental Controls for Environmental Protection
Division of Environmental Protection, New York State

CEP, Inc.

OUT-OF-STATE 800/545-2188 • FAX: 505-9011

Page 18
Received: 08/06/90

CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-103

SAMPLE ID TSF0513C

FRACTION 05A TEST CODE ZHE NAME Zero Head Space Extract
Date & Time Collected 07/10/90 15:13:00 Category SLUDGE

B-45

PARAMETER	RESULT	LIMIT
Acetonitrile	<100	100
Benzene	<44	44
Carbon Disulfide	<100	100
Carbon Tetrachloride	<20	20
Chlorobenzene	<60	60
Chloroform	<16	16
1,2-Dichloroethane	<28	28
1,1-Dichloroethylene	23.6	16
Isobutanol	<100	100
Methylene Chloride	290.0	28
Methyl Ethyl Ketone	<100	100
Pyridine	<100	100
1,1,1,2-Tetrachloroethane	<100	100
1,1,2,2-Tetrachloroethane	<69	69
Tetrachloroethylene	1990.0	41
Toluene	<60	60
1,1,1-Trichloroethane	<38	38
1,1,2-Trichloroethane	<50	50
Trichloroethylene	11000.0	19
Vinyl Chloride	<20	20

Notes and Definitions for this Report:

UNITS ug/liter

Controls for Environmental Test

Utica, NY
Environmental 800/545-2100 • FAX: 545-2101Page 19
Received: 03/06/90CEP, Inc.
REPORT
Results by Sample

SAMPLE ID TSF0514C

FRACTION 06C TEST CODE TCLP
Date & Time Collected 07/10/90 15:34:00 NAME TCLP Metals
Category SLUDGE

TCLP Metals	Detection Limit mg/L	RESULT
Arsenic	0.01	***
Barium	0.1	***
Cadmium	0.001	***
Chromium	0.01	***
Lead	0.01	***
Mercury	0.0001	***
Selenium	0.01	***
Silver	0.01	***

All results reported in:

UNITS mg/liter

Controls for Environmental
Contamination, Inc.

CEP, Inc.
RESULTS

000-545-2100 • FAX: 505-504-
1111

Page 20
Received: 08/06/90

CEP, Inc.
REPORT
Results by Sample

SAMPLE ID TSF0514C

FRACTION 06B TEST CODE TCLP 0 NAME TCLP Organics
Date & Time Collected 07/10/90 15:34:00 Category SLUDGE

PARAMETER

Bis(2-chloroethyl)ether	<0.02	0.02
O-Cresol	<0.03	0.03
M-Cresol	<0.03	0.03
P-Cresol	<0.03	0.03
Pentachlorophenol	<0.01	0.01
Phenol	<0.06	0.06
2, 3, 4, 6-Tetrachlorophenol	<0.06	0.06
2, 4, 5-Trichlorophenol	<0.01	0.01
2, 4, 6-Trichlorophenol	<0.009	0.009
2, 4-Dinitrotoluene	<0.02	0.02
Hexachlorobenzene	<0.06	0.06
Hexachlorobutadiene	<0.03	0.03
Hexachloroethane	<0.06	0.06
Nitrobenzene	<0.06	0.06
Chlordane	<0.004	0.004
Endrin	<0.001	0.001
Heptachlor	<0.001	0.001
Lindane	<0.001	0.001
Methoxychlor	<0.001	0.001
Toxaphene	<0.004	0.004
2, 4-D	<0.003	0.003
Silvex	<0.003	0.003
1, 2-Dichlorobenzene	<0.06	0.06
1, 4-Dichlorobenzene	<0.01	0.01

Notes and Definitions for this Report:

UNITS mg/liter

Controls for Environmental

Quality Assurance Laboratory

CEP, Inc.

OUTER STATE 800/545-2180 • FAX 505-908

Page 21
Received: 08/06/90CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-103

SAMPLE ID TSF0514C

FRACTION 06A TEST CODE ZHE NAME Zero Head Space Extract
Date & Time Collected 07/10/90 15:34:00 Category SLUDGE

PARAMETER	RESULT	LIMIT
Acetonitrile	<100	100
Benzene	<44	44
Carbon Disulfide	<100	100
Carbon Tetrachloride	<28	28
Chlorobenzene	<60	60
Chloroform	<16	16
1,2-Dichloroethane	<28	28
1,1-Dichloroethylene	17.8	16
Isobutanol	<100	100
Methylene Chloride	84.5	28
Methylethyl Ketone	<100	100
Pyridine	<100	100
1,1,1,2-Tetrachloroethane	<100	100
1,1,2,2-Tetrachloroethane	<69	69
Tetrachloroethylene	3000.0	41
Toluene	<60	60
1,1,1-Trichloroethane	<38	38
1,1,2-Trichloroethane	<50	50
Trichloroethylene	10000.0	19
Vinyl Chloride	<20	20

Notes and Definitions for this Report:

UNITS ug/liter

Appendix C

Number

APPENDIX C

VALIDATED FY-89 GROUNDWATER ANALYTICAL RESULTS

DATA QUALIFIER DEFINITIONS

Organic Analysis Data Flags

- A - Indicates that a Tentatively Identified Compound is a suspected aldol-condensation product.
- B - Used when the analyte is found in the associated blank as well as in the sample.
- C - Applies to pesticide results where the identification has been confirmed by GC/MS.
- D - Identifies all compounds identified in an analysis at a secondary dilution factor.
- E - Identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis
- J - Indicates as estimated value.
- U - Indicates compound was analyzed for but not detected.

Organic Validation Data Qualifiers

- J - The analyte was positively identified in the sample, but the associated numerical value may not be an accurate representation of the amount actually present in the environmental sample. The data should be seriously considered for decision making and are usable for many purposes.
- N - Presumptive evidence of the presence of the material.
- NJ - Presumptive evidence of the presence of the material at an estimated quantity.
- R - The data are unusable (may or may not be present). Resampling and reanalysis is necessary for verification.
- U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
- UJ - The material was analyzed for, but was not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFIER DEFINITIONS

Inorganic Analysis Data Flags

- B - Value is less than the CRDL, but greater than the IDL.
- E - Value is estimated because of the presence of interference.
- N - Spiked sample recovery not within control limits.
- NR - Analyte was not required to be analyzed.
- S - Value was determined by the method of standard additions (MSA).
- U - Analyte was analyzed for but not detected.
- W - Post-digestion spike for Furnace AA analysis is out of control limits (85% to 115%), while sample absorbance is less than 50% of spike absorbance.
- * - Duplicate analysis not within control limits.

Methods

- A - Flame AA.
- CV - Manual Cold Vapor AA.
- F - Furnace AA.
- NR - Not run, analyte not required to be analyzed.
- P - Inductively Coupled Plasma-Atomic Emission Spectrometry.

Inorganic Validation Data Qualifiers

- J - The analyte was analyzed for and was positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- R - The data are unusable.
- U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
- UJ - The material was analyzed for, but was not detected. The associated value is an estimate and may not accurately reflect the instrument detection limit in the sample matrix.

Reference: Environmental Restoration Department, Sample Management Office—Standard Operating Procedures 12.1.4 and 12.1.5 (EG&G, Idaho).

SW-846 Method 8240

PRACTICAL QUANTITATION LIMITS (PQL) FOR VOLATILE ORGANICS

Volatile	CAS Number	Practical Quantitation Limits	
		Groundwater	Low Soil/Sediment
		ug/L	ug/Kg
1. Chloromethane	74-87-3	10	10
2. Bromomethane	74-83-9	10	10
3. Vinyl Chloride	75-01-4	10	10
4. Chloroethane	75-00-3	10	10
5. Methylene Chloride	75-09-2	5	5
6. Acetone	67-64-1	100	100
7. Carbon Disulfide	75-15-0	5	5
8. 1,1-Dichloroethene	75-35-4	5	5
9. 1,1-Dichloroethane	75-35-3	5	5
10. trans-1,2-Dichloroethene	156-60-5	5	5
11. Chloroform	67-66-3	5	5
12. 1,2-Dichloroethane	107-06-2	5	5
13. 2-Butanone	78-93-3	100	100
14. 1,1,1-Trichloroethane	71-55-6	5	5
15. Carbon Tetrachloride	56-23-5	5	5
16. Vinyl Acetate	108-05-4	50	50
17. Bromodichloromethane	75-27-4	5	5
18. 1,1,2,2-Tetrachloroethane	79-34-5	5	5
19. 1,2-Dichloropropane	78-87-5	5	5
20. trans-1,3-Dichloropropene	10061-02-6	5	5
21. Trichloroethene	79-01-6	5	5
22. Dibromochloromethane	124-48-1	5	5
23. 1,1,2-Trichloroethane	79-00-5	5	5
24. Benzene	71-43-2	5	5
25. cis-1,3-Dichloropropene	10061-01-5	5	5
26. 2-Chloroethyl Vinyl Ether	110-75-8	10	10
27. Bromoform	75-25-2	5	5
28. 2-Hexanone	591-78-6	50	50
29. 4-Methyl-2-pentanone	108-10-1	50	50
30. Tetrachloroethene	127-18-4	5	5

SW-846 Method 6010-Inorganics

RECOMMENDED WAVELENGTHS AND ESTIMATED INSTRUMENTAL DETECTION LIMITS

Element	Wavelength ^a (nm)	Estimated Detection Limit ^b (ug/L)
Aluminum	308.215	45
Antimony	206.833	32
Arsenic	193.696	53
Barium	455.403	2
Beryllium	313.042	0.3
Boron	249.773	5
Cadmium	226.502	4
Calcium	317.933	10
Chromium	267.716	7
Cobalt	228.616	7
Copper	324.754	6
Iron	259.940	7
Lead	220.353	42
Magnesium	279.079	30
Manganese	257.610	2
Molybdenum	202.030	8
Nickel	231.604	15
Potassium	766.491	-- ^c
Selenium	196.026	75
Silicon	288.158	58
Silver	328.068	7
Sodium	588.995	29
Thallium	190.864	40
Vanadium	292.402	8
Zinc	213.856	2

a. The wavelengths listed are recommended because of their sensitivity and overall acceptance. Other wavelengths may be substituted if they can provide the needed sensitivity and are treated with the same corrective techniques for spectral interference. In time, other elements may be added as more information becomes available and as required.

b. The estimated instrumental detection limits shown are taken from Reference 1 in Section 10.0 (SW-846 3rd Edition). They are given as a guide for an instrumental limit. The actual method detection limits are sample dependent and may vary as the sample matrix varies.

c. Highly dependent on operating conditions and plasma position.

Note: Mercury was analyzed using SW-846 Method 7470.

TABLE _-__ 1989 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA

Page 1 of 4

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN ANP06 MONITORING WELL ANP0689001A	TAN ANP08 MONITORING WELL ANP0889001A	TAN ANP09 MONITORING WELL ANP0989001A	TAN FET02 MONITORING WELL FET0289001A	TAN IET06 MONITORING WELL IET0689002A	TAN TANO1 MONITORING WELL TAN0189001A	TAN TANO1 MONITORING WELL TAN0189002A
	WATER ug/L <u>ANP0689001</u>						
FIELD MEASUREMENTS							
Depth (ft)	230-250	232-304	240-260	215-230	220-240	200-350	200-350
TARGET COMPOUNDS							
Acetone	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---
1,2-Dichloroethene (total)	---	---	---	---	---	---	---
Chloroform	---	---	---	---	---	---	---
1,2-Dichloroethane	5	---	---	---	---	---	---
2-Butanone	---	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	---	---	---	---	---
Carbon Tetrachloride	---	---	---	---	---	---	---
Trichloroethene	---	6	---	---	---	7	7
Dibromochloromethane	---	---	---	---	---	---	---
Tetrachloroethene	---	2 J	---	---	---	2 J	2 J
Toluene	---	---	---	---	---	---	---
Dilution Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	10(14)d	10(14)d	7(14)d	11(14)d	10(14)d	10(14)d	10(14)d

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA (Continued)

Page 2 of 4

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN TAN02 MONITORING WELL TAN0289001A WATER ug/L <u>ANP0689001</u>	TAN TAN03 MONITORING WELL TAN0389001A WATER ug/L <u>TAN0389001</u>	TAN TAN03 MONITORING WELL TAN0389002A WATER ug/L <u>TAN0389001</u>	TAN TAN04 MONITORING WELL TAN0489001A WATER ug/L <u>ANP0689001</u>	TAN TAN05 MONITORING WELL TAN0589001A WATER ug/L <u>ANP0689001</u>	TAN TAN08 MONITORING WELL TAN0889001A WATER ug/L <u>ANP0689001</u>	TAN TAN09 MONITORING WELL TAN0989001A WATER ug/L <u>ANP0689001</u>
<u>FIELD MEASUREMENTS</u>							
Depth (ft)	235-335	230-235	230-235	235-240	280-285	232-304	290-295
<u>TARGET COMPOUNDS</u>							
Acetone	---	---	---	---	72	61	---
1,1-Dichloroethene	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---
1,2-Dichloroethene (total)	---	---	---	---	---	---	---
Chloroform	---	---	---	---	---	---	---
1,2-Dichloroethane	---	---	---	---	---	---	---
2-Butanone	---	---	---	---	6 J	10 R	---
1,1,1-Trichloroethane	---	---	---	3 J	---	---	---
Carbon Tetrachloride	---	---	---	---	---	---	---
Trichloroethene	3 J	---	---	70	71	---	86
Dibromochloromethane	---	---	---	---	---	---	---
Tetrachloroethene	---	---	---	20	16	---	17
Toluene	---	---	---	---	---	1 J	---
Dilution Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	10(14)d	3(14)d	3(14)d	6(14)d	5(14)d	5(14)d	8(14)d

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA (Continued)

Page 3 of 4

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN TAN10 MONITORING WELL TAN1089001A	TAN TAN10 MONITORING WELL TAN1089002A	TAN TAN10A MONITORING WELL TAN10A9001A	TAN TAN11 MONITORING WELL TAN1189001A	TAN TAN11 MONITORING WELL TAN1189002A	TAN TAN1 MONITORING WELL TAN189002A	TAN TAN1 MONITORING WELL TAN289002A
	WATER ug/L <u>TANFB89023</u>	WATER ug/L <u>TANFB89023</u>	WATER ug/L <u>TANE090001A</u>	WATER ug/L <u>TAND389001</u>	WATER ug/L <u>TAND389001</u>	WATER ug/L <u>ANP0689001</u>	WATER ug/L <u>ANP0689001</u>
<u>FIELD MEASUREMENTS</u>							
Depth (ft)	220-225	220-225	-	260-265	215-230	230-235	230-235
<u>TARGET COMPOUNDS</u>							
Acetone	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---
1,2-Dichloroethene (total)	---	---	---	---	---	2 J	85
Chloroform	---	---	---	---	---	---	---
1,2-Dichloroethane	---	---	---	---	---	---	---
2-Butanone	---	---	---	---	---	---	---
1,1,1-Trichloroethane	1 J	1 J	---	---	---	---	---
Carbon Tetrachloride	6	6	---	---	---	---	---
Trichloroethene	28	25	26	89	---	150	820 E
Dibromochloromethane	---	---	---	---	---	---	5
Tetrachloroethene	11	11	7	24	27	23	11
Toluene	---	1 J	---	---	---	---	---
Dilution Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	5(14)d	5(14)d	8(14)d	5(14)d	7(14)d	6(14)d	7(14)d

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN TAND2 MONITORING WELL TAND289002ADL WATER ug/L <u>ANP0689001</u>	TAN TAND3 MONITORING WELL TAND389001A WATER ug/L <u>TAND389001</u>	TAN TAND3 MONITORING WELL TAND389002A WATER ug/L <u>TAND389001</u>	TAN USG24 MONITORING WELL USG2489002A WATER ug/L <u>TAND389001</u>	TAN USG26 MONITORING WELL USG2489002ADL WATER ug/L <u>ANP0689001</u>	TAN USG26 MONITORING WELL USG2689001A WATER ug/L <u>ANP0689001</u>
FIELD MEASUREMENTS						
Depth (ft)	230-235	220-225	220-225	240-245	240-245	205-260
TARGET COMPOUNDS						
Acetone	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	9	---	---
1,1-Dichloroethane	---	---	---	2 J	---	---
1,2-Dichloroethene_(total)	---	---	---	44	11 JD	---
Chloroform	---	---	---	1 J	---	---
1,2-Dichloroethane	---	---	---	---	---	---
2-Butanone	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	---	12	---	---
Carbon Tetrachloride	---	---	---	---	---	---
Trichloroethylene	660 D	---	---	1400 E	1300 D	---
Dibromochloromethane	---	---	---	---	---	---
Tetrachloroethylene	---	---	---	71	64 D	---
Toluene	---	---	---	---	---	6
Dilution Factor	10.000	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	8(14)d	5(14)d	6(14)d	4(14)d	6(14)d	4(14)d

1989 TAN Hydrogeologic Investigation S&A Data Document · November 1991

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA

Page 1 of 4

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN ANP06 MONITORING WELL ANP0689001B WATER ug/L ANP0689001	TAN ANP08 MONITORING WELL ANP0889001B WATER ug/L ANP0689001	TAN ANP09 MONITORING WELL ANP0989001B WATER ug/L ANP0689001	TAN FE102 MONITORING WELL FET0289001B WATER ug/L ANP0689001	TAN IET06 MONITORING WELL IET0689002B WATER ug/L ANP0689001	TAN TAN01 MONITORING WELL TAN0189001B WATER ug/L ANP0689001
FIELD MEASUREMENTS						
Depth (ft)	230-250	232-304	240-260	215-230	220-240	200-350
ANALYTES						
Aluminum	---	---	---	---	255	---
Antimony	---	---	---	---	---	---
Arsenic	2.9 B	2.7 B	3.5 B	3.0 B	2.7 B	2.6 B
Barium	71.0 B	103 B	98.0 B	94.0 B	136 B	119 B
Beryllium	---	---	---	---	---	---
Cadmium	---	---	---	---	---	---
Calcium	44500	48100	38400	51500	52000	56500
Chromium	---	11.0	---	---	---	---
Cobalt	---	---	---	---	---	---
Copper	---	---	---	---	---	27.0
Iron	333	31.0 B	31.0 B	37.0 B	673	36.0 B
Lead	---	---	2.9 B	---	---	---
Magnesium	16400	15600	15800	15500	14700	16600
Manganese	9.0 B	5.0 B	6.0 B	5.0 B	175	6.0 B
Mercury	---	---	---	---	---	---
Nickel	---	---	---	---	---	---
Potassium	2420 B	3880 B	3380 B	2590 B	4380 B	2450 B
Selenium	1.0 B	1.4 B	1.3 B	---	---	1.0 B
Silver	---	---	---	---	1.0 B	---
Sodium	10600	10000	16000	9180	22900	8930
Thallium	---	---	1.0 B	---	---	---
Vanadium	---	---	---	---	---	---
Zinc	67.0	---	---	---	87.0	---
Cyanide	NR	NR	NR	NR	NR	NR
Total (Allowed) Hold Time ^a	9(182)d	10(182)d	4(182)d	8(182)d	9(182)d	10(182)d
Total (Allowed) Hold Time ^b	7(28)d	8(28)d	15(28)d	6(28)d	7(28)d	8(28)d
Total (Allowed) Hold Time ^c	9(182)d	10(182)d	4(182)d	8(182)d	9(182)d	10(182)d

a. ICP/FAAS

b. CVAAS

c. GFAAS

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN TAN01 MONITORING WELL TAN0189002B WATER ug/L ANP0689001	TAN TAN02 MONITORING WELL TAN02890018 WATER ug/L ANP0689001	TAN TAN03 MONITORING WELL TAN03890018 WATER ug/L TAN0389001	TAN TAN03 MONITORING WELL TAN03890028 WATER ug/L TAN0389001	TAN TAN04 MONITORING WELL TAN0489001B WATER ug/L ANP0689001	TAN TAN05 MONITORING WELL TAN05890018 WATER ug/L ANP0689001
<u>FIELD MEASUREMENTS</u>						
Depth (ft)	200-350	235-335	230-235	230-235	235-240	280-285
<u>ANALYTES</u>						
Aluminum	---	---	---	---	---	---
Antimony	---	---	---	---	---	---
Arsenic	2.6 B	2.7 B	---	---	---	---
Barium	119 B	106 B	99.0 B	99.0 BE	173 B	127 B
Beryllium	---	---	---	---	---	---
Cadmium	---	---	---	---	---	---
Calcium	54500	53500	53000 *	52000 *	59500	61500
Chromium	---	---	---	---	10.0	---
Cobalt	---	---	---	---	---	---
Copper	---	28.0	---	---	156	---
Iron	35.0 B	73.0 B	87.0 B	101	244	456
Lead	---	2.1 B	4.4	80.3	20.7	---
Magnesium	16800	14500	14100	14100	15900	15900
Manganese	6.0 B	6.0 B	13.0 B	13.0 B	284	11.0 B
Mercury	---	---	2.0	5.0	---	---
Nickel	---	---	---	---	---	---
Potassium	2490 B	3200 B	4700 B	4760 B	3630 B	2770 B
Selenium	1.4 B	---	1.6 B	2.1 B	1.4 B	---
Silver	---	---	---	---	---	---
Sodium	8630	7970	8450 *	8350 E	10700	10000
Thallium	---	---	---	---	---	---
Vanadium	---	---	---	---	---	---
Zinc	---	45.0	608	610	935	587
Cyanide	NR	NR	NR	NR	NR	NR
Total (Allowed) Hold Time ^a	10(182)d	10(182)d	9(182)d	9(182)d	3(182)d	2(182)d
Total (Allowed) Hold Time ^b	8(28)d	8(28)d	21(28)d	21(28)d	14(28)d	13(28)d
Total (Allowed) Hold Time ^c	10(182)d	10(182)d	1(182)d	1(182)d	3(182)d	2(182)d

a. ICP/FAAS

b. CVAAS

c. GFAAS

1989 TAN Hydrogeologic Investigation S&A Data Document - November 1991

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA

Page 3 of 4

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN TAN08 MONITORING WELL TAN0889001B WATER ug/L ANP0689001	TAN TAN09 MONITORING WELL TAN0989001B WATER ug/L ANP0689001	TAN TAN10 MONITORING WELL TAN1089001B WATER ug/L TANFB89023	TAN TAN10 MONITORING WELL TAN1089002B WATER ug/L TANFB89023	TAN TAN11 MONITORING WELL TAN1189001B WATER ug/L TAND389001	TAN TAN11 MONITORING WELL TAN1189002B WATER ug/L TAN0389001
FIELD MEASUREMENTS						
Depth (ft)	230-252	290-295	220-225	220-225	260-265	260-265
ANALYTES						
Aluminum	---	---	---	---	---	---
Antimony	---	---	---	---	---	---
Arsenic	2.4 B	---	---	---	---	---
Barium	111 B	270	206	238	104 BE	105 B
Beryllium	---	---	---	---	---	---
Cadmium	---	---	---	---	---	---
Calcium	54000	94600	8390	103000	55000 *	54500 *
Chromium	---	---	---	---	---	---
Cobalt	---	---	---	---	---	---
Copper	---	---	---	---	---	---
Iron	177	278	262	250	801	646
Lead	---	3.7	8.1	2.6 B	2.7 B	4.7
Magnesium	13600	25600	20400 B	25000 B	19800	19600
Manganese	14.0 B	15.0	67.0	80.0	39.0	41.0
Mercury	---	---	---	---	---	---
Nickel	---	---	---	---	---	---
Potassium	5440	5100	3590 B	4180 B	4420 B	4530 B
Selenium	---	---	---	---	---	---
Silver	---	---	---	---	---	---
Sodium	8070	44000	28400	33500	16400 E	16700 E
Thallium	---	---	---	---	---	---
Vanadium	---	---	---	---	---	---
Zinc	423	724	123	144	580	560
Cyanide	NR	NR	NR	NR	NR	NR
Total (Allowed) Hold Time ^a	2(182)d	3(182)d	22(182)d	22(182)d	13(182)d	13(182)d
Total (Allowed) Hold Time ^b	13(28)d	8(28)d	4(28)d	4(28)d	5(28)d	5(28)d
Total (Allowed) Hold Time ^c	2(182)d		8(182)d	8(182)d	5(182)d	5(182)d

a. ICP/FAAS

b. CVAAS

c. GFAAS

C-13

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA

Page 4 of 4

AREA LOCATION	TAN TAND1 MONITORING WELL TAND189002B WATER ug/L ANP0689001	TAN TAND2 MONITORING WELL TAND289002B WATER ug/L ANP0689001	TAN TAND3 MONITORING WELL TAND389001B WATER ug/L TAND389001	TAN TAND3 MONITORING WELL TAND389002B WATER ug/L TAND389001	TAN TAND3 MONITORING WELL USG2489002B WATER ug/L TAND389001	TAN TAN USG24 MONITORING WELL USG2689001B WATER ug/L ANP0689001
FIELD MEASUREMENTS						
Depth (ft)	215-230	230-235	220-225	220-225	240-245	205-260
ANALYTES						
Aluminum	---	243	---	---	---	---
Antimony	---	---	---	---	---	---
Arsenic	---	2.5 B	---	---	---	2.8 B
Barium	85.0 B	312	88.0 BE	86.0 BE	204 E	47.0 B
Beryllium	---	---	---	---	---	---
Cadmium	---	---	---	---	---	---
Calcium	5800 B	90900	53900 *	54500 *	47400 *	42700
Chromium	---	---	---	---	---	---
Cobalt	---	---	---	---	---	---
Copper	---	25.0	---	---	---	---
Iron	356	808	347	343	243	183
Lead	---	8.4	6.8	4.5	13.5	---
Magnesium	19800	23300	15800	15500	19100	15400
Manganese	23.0	64.0	---	---	---	6.0 B
Mercury	---	---	---	---	---	---
Nickel	---	---	---	---	---	---
Potassium	4720 B	4870 B	3660 B	3700 B	3700 B	3630 B
Selenium	2.2 BW	---	1.3 BW	1.1 BW	1.2 BW	---
Silver	---	---	---	---	---	---
Sodium	14000	72900	7490 E	7430 E	27100 E	15800
Thallium	---	---	---	---	---	---
Vanadium	---	---	---	---	---	---
Zinc	20.0	44.0	40.0	40.0	159	---
Cyanide	NR	NR	NR	NR	NR	NR
Total (Allowed) Hold Time ^a	7(182)d	3(182)d	14(182)d	14(182)d	15(182)d	3(182)d
Total (Allowed) Hold Time ^b	12(28)d	8(28)d	6(28)d	6(28)d	7(28)d	14(28)d
Total (Allowed) Hold Time ^c	7(182)d	3(182)d	6(182)d	6(182)d	7(182)d	3(182)d

a. ICP/FAAS

b. CVAAS

c. GFAAS

1989 TAN Hydrogeologic Investigation S&A Data Document - November 1991

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - NON-METAL INORGANIC DATA

Page 1 of 4

AREA	TAN ANP06	TAN ANP08	TAN ANP09	TAN FET02	TAN IET06	TAN TAND1
LOCATION	MONITORING WELL ANP0689001C	MONITORING WELL ANP0889001C	MONITORING WELL ANP0989001C	MONITORING WELL FET0289001C	MONITORING WELL IET0689002C	MONITORING WELL TAND189002C
TYPE OF LOCATION						
SAMPLE NUMBER						
MEDIA	WATER	WATER	WATER	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
SDG NUMBER	ANP0689001	ANP0689001	ANP0689001	ANP0689001	ANP0689001	ANP0689001
TARGET COMPOUNDS						
Alkalinity	140000	140000	132000	140000	158000	124000
Chloride	10900	11800	11800	14700	22700	49500
Fluoride	280	240	430	230	200	140
Nitrate	869	1037	881	956	817	744
Sulfate	32600	30000	31000	34400	33600	33900
Total (Allowed) Hold Time						
Alkalinity	9(14)d	9(14)d	3(14)d	8(14)d	9(14)d	8(14)d
Chloride	13(28)d	13(28)d	7(28)d	12(28)d	13(28)d	4(28)d
Fluoride	15(28)d	15(28)d	9(28)d	14(28)d	15(28)d	6(28)d
Nitrate	28(28)d	28(28)d	2(28)d	27(28)d	28(28)d	19(28)d
Sulfate	13(28)d	13(28)d	7(28)d	12(28)d	13(28)d	4(28)d

1989 TAN Hydrogeologic Investigation S&A Data Document · November 1991

TABLE ____ 1989 TAN HYDROGEOLOGIC INVESTIGATION - NON-METAL INORGANIC DATA

Page 2 of 4

AREA	TAN TAN02	TAN TAN03	TAN TAN03	TAN TAN01	TAN TAN01	TAN TAN02
LOCATION	MONITORING WELL TAN0289002C	MONITORING WELL TAN0389001C	MONITORING WELL TAN0389002C	MONITORING WELL TAN0189001C	MONITORING WELL TAN0189002C	MONITORING WELL TAN0289001C
TYPE OF LOCATION						
SAMPLE NUMBER						
MEDIA	WATER	WATER	WATER	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
SDG NUMBER	ANP0689001	TAN0389001	TAN0389001	ANP0689001	ANP0689001	ANP0689001
TARGET COMPOUNDS						
Alkalinity	212000	142000	146000	146000	146000	146000
Chloride	81000	12300	12400	22900	22400	11500
Fluoride	130	240	240	210	190	230
Nitrate	3188	1130	1110	1660	1664	2113
Sulfate	43200	33800	34000	35900	34100	31600
Total (Allowed) Hold Time						
Alkalinity	4(14)d	6(14)d	6(14)d	9(14)d	9(14)d	9(14)d
Chloride	34(28)d*	31(28)d*	31(28)d*	13(28)d	13(28)d	13(28)d
Fluoride	34(28)d*	34(28)d*	34(28)d*	15(28)d	15(28)d	15(28)d
Nitrate	33(28)d*	13(28)d	13(28)d	28(28)d	28(28)d	28(28)d
Sulfate	2(28)d	31(28)d*	31(28)d*	23(28)d	13(28)d	13(28)d

1989 TAN Hydrogeologic Investigation S&A Data Document · November 1991

TABLE _-_- 1989 TAN HYDROGEOLOGIC INVESTIGATION - NON-METAL INORGANIC DATA

Page 3 of 4

AREA	TAN						
LOCATION	TAN03	TAN03	TAN04	TAN05	TAN08	TAN08	TAN09
TYPE OF LOCATION	MONITORING WELL						
SAMPLE NUMBER	TAN0389001C	TAN0389002C	TAN0489001C	TAN0589001C	TAN0889001C	TAN0889001C	TAN0989001C
MEDIA	WATER						
UNITS	ug/L						
SDG NUMBER	TAND389001	TAND389001	ANP0689001	ANP0689001	ANP0689001	ANP0689001	ANP0689001
TARGET COMPOUNDS							
Alkalinity	138000	138000	156000	147000	117000	186000	
Chloride	13400	13400	23800	28200	37200	79000	
Fluoride	260	240	240	220	200	180	
Nitrate	1010	1010	1437	1177	1105	2347	
Sulfate	33800	33700	28200	31200	26000	45200	
Total (Allowed) Hold Time							
Alkalinity	11(14)d	11(14)d	2(14)d	2(14)d	2(14)d	4(14)d	
Chloride	26(28)d	26(28)d	6(28)d	5(28)d	5(28)d	34(28)d*	
Fluoride	29(28)d*	29(28)d*	8(28)d	7(28)d	7(28)d	34(28)d*	
Nitrate	8(28)d	8(28)d	21(28)d	20(28)d	20(28)d	33(28)d*	
Sulfate	26(28)d	26(28)d	6(28)d	5(28)d	5(28)d	2(28)d	

1989 TAN Hydrogeologic Investigation S&A Data Document • November 1991

TABLE _._. 1989 TAN HYDROGEOLOGIC INVESTIGATION - NON-METAL INORGANIC DATA

Page 4 of 4

AREA	TAN						
LOCATION	TAN10	TAN10	TAN11	TAN11	USG24	USG24	USG26
TYPE OF LOCATION	MONITORING WELL						
SAMPLE NUMBER	TAN1089001C	TAN1089002C	TAN1189001C	TAN1189002C	USG2489002C	USG2489002C	USG2689001C
MEDIA	WATER						
UNITS	ug/L						
SDG NUMBER	TANFB89023	TANFB89023	TAND389001	TAND389001	TAND389001	TAND389001	ANP0689001
TARGET COMPOUNDS							
Alkalinity	174000	182000	141000	142000	160000	142000	
Chloride	1131000	107000	47800	47800	71200	12600	
Fluoride	160	210	230	240	210	460	
Nitrate	614	497	870	928	2020	982	
Sulfate	375000	37400	28800	28800	36600	29000	
Total (Allowed) Hold Time							
Alkalinity	12(14)d	12(14)d	5(14)d	5(14)d	3(14)d	2(14)d	
Chloride	28(28)d	28(28)d	30(28)d*	30(28)d*	32(28)d*	6(28)d	
Fluoride	27(28)d	27(28)d	33(28)d*	33(28)d*	35(28)d*	8(28)d	
Nitrate	29(28)d*	29(28)d*	12(28)d	12(28)d	14(28)d	21(28)d	
Sulfate	28(28)d	28(28)d	30(28)d*	30(28)d*	32(28)d*	6(28)d	

DATA QUALIFIER DEFINITIONS

Radiological Data Qualifier Flags (DQF)

- No Flag - The associated sample result is a true positive result and is considered valid and usable.
- J - The associated sample result is an estimated quantity due to quality control or documentation problems. These results should be treated as estimates only. Absolute quantitative or risk assessments should not be made from results flagged with a "J," but these results can be used for yes/no decisions as to whether a contaminant is present at the sampling location.
- U - The constituent of interest was analyzed for, but was not detected above the minimum detectable activity of the instrumentation. There may or may not be a result provided in the data package. If no result is provided a "zero" result should not be entered in its place as the zero may be mistakenly included in statistical calculations performed from the sample results.
- R - The sample result is not to be used for any purpose.

Radiological Analytical Support Level (ASL)

- Level 3 - Level 3 analytical data is defined as sample results obtain from an analytical laboratory which has been approved by the Environmental Restoration Program Sample Management office approval process. Level 3 analytical data must have supporting quality control information.

Level 3 sample results can be used for quantification of activity levels, for determination of the level and extent of radioactive contamination, for making disposal decisions, for development of remedial actions, and, with limitations, for risk assessment calculations.

Level 3 provides low detection limits with known precision and accuracy, and accepted laboratory methods.

- Level 4 - Level 4 analytical data is defined as sample results that come from an Environmental Restoration Program Sample Management Office approved laboratory and have complete supporting quality control information. Level 4 sample results can be used for any required purpose including; quantification of activity levels, determination of the extent of radioactive contamination, development of remedial actions, and risk assessment calculations. Level 4 is used when comprehensive data quality documentation is required.

TABLE . . . 1989 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES Page 1 of 3

Date: 02/01/90

Lab Name: RML

Case No.: _____

Report No.: STCS00490

SDG No.: STCS00490

Field Sample No.	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Error	Units	Anal Date	Sample Date	Sample Size	Yield	Detector ID	DQF	ASL
ANP0689001G	A6121889026	WATER	GAMMA	ND		pCi/mL	12/18/89	11/29/89	540.0000	0.0	RML A6	U	4
ANP0889001G	A5120889037	WATER	GAMMA	ND		pCi/mL	12/08/89	11/28/89	540.0000	0.0	RML A5	U	4
ANP0989001G	A6120489034	WATER	GAMMA	ND		pCi/mL	12/04/89	12/04/89	540.0000	0.0	RML A6	U	4
FET0289001G	A6121589029	WATER	GAMMA	ND		pCi/mL	12/15/89	11/30/89	540.0000	0.0	RML A6	U	4
IET0689002G	A5121889025	WATER	GAMMA	ND		pCi/mL	12/18/89	11/29/89	540.0000	0.0	RML A5	U	4
TAN0189001G	A6120789033	WATER	GAMMA	ND		pCi/mL	12/07/89	11/28/89	540.0000	0.0	RML A6	U	4
TAN0189002G	A6121189031	WATER	GAMMA	ND		pCi/mL	12/11/89	11/28/89	540.0000	0.0	RML A6	U	4
TAN0289001G	A6121389025	WATER	GAMMA	ND		pCi/mL	12/13/89	11/28/89	490.0000	0.0	RML A6	U	4
TAN0389001G	A5010290039	WATER	GAMMA	ND		pCi/mL	01/02/90	12/18/89	520.0000	0.0	RML A5	U	4
TAN0389002G	A6010290040	WATER	GAMMA	ND		pCi/mL	01/02/90	12/18/89	530.0000	0.0	RML A6	U	4
TAN0489001G	A5122189033	WATER	GAMMA	ND		pCi/mL	12/21/89	12/05/89	520.0000	0.0	RML A5	U	4
TAN0589001G	A5121989019	WATER	GAMMA	ND		pCi/mL	12/19/89	12/06/89	530.0000	0.0	RML A5	U	4
TAN0889001G	A6121989020	WATER	GAMMA	ND		pCi/mL	12/19/89	12/06/89	500.0000	0.0	RML A6	U	4

TABLE . . . 1989 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES Page 2 of 3

Date: 02/01/90

Lab Name: RML

Case No.: _____

Report No.: STCS00490

SDG No.: STCS00490

Field Sample No.	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Error	Units	Anal Date	Sample Date	Sample Size	Yield	Detector ID	DOF	ASL
TAN0989001G	A6122789039	WATER	GAMMA	ND		pCi/mL	12/27/89	12/11/89	540.0000	0.0	RML A6	U	4
TAN1089001G	A6011190040	WATER	GAMMA	ND		pCi/mL	01/11/90	01/11/90	540.0000	0.0	RML A6	U	4
TAN1089002G	A5011190039	WATER	GAMMA	ND		pCi/mL	01/11/90	01/11/90	540.0000	0.0	RML A5	U	4
TAN1189001G	A6122289040	WATER	GAMMA	ND		pCi/mL	12/22/89	12/14/89	540.0000	0.0	RML A6	U	4
TAN1189002G	A5122289039	WATER	GAMMA	ND		pCi/mL	12/22/89	12/14/89	530.0000	0.0	RML A5	U	4
TAND189002G	A6120889038	WATER	GAMMA	ND		pCi/mL	12/08/89	12/07/89	540.0000	0.0	RML A6	U	4
TAND289002G	A5122789038	WATER	GAMMA	ND		pCi/mL	12/27/89	12/11/89	540.0000	0.0	RML A5	U	4
TAND389001G	A5122889031	WATER	GAMMA	ND		pCi/mL	12/28/89	12/13/89	530.0000	0.0	RML A5	U	4
TAND389002G	A5122989030	WATER	GAMMA	ND		pCi/mL	12/29/89	12/13/89	540.0000	0.0	RML A5	U	4
TANEQ89005G	A6122889032	WATER	GAMMA	ND		pCi/mL	12/28/89	12/11/89	540.0000	0.0	RML A6	U	4
TANEQ89006G	A6122989031	WATER	GAMMA	ND		pCi/mL	12/29/89	12/13/89	530.0000	0.0	RML A6	U	4
TANEQ8904GG	A6122089017	WATER	GAMMA	ND		pCi/mL	12/20/89	12/05/89	520.0000	0.0	RML A6	U	4
TANTS89005G	A5012290028	WATER	GAMMA	ND		pCi/mL	01/22/90	01/16/90	540.0000	0.0	RML A5	U	4

TABLE . . . 1989 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES Page 3 of 3

Date: 02/01/90

Lab Name: RML

Case No.: [REDACTED]

Report No.: STCS00490

SDG No.: STCS00490

TABLE . . . 1989 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR TRITIUM

Page 1 of 3

Date: 02/01/90

Lab Name: RML

Case No.: _____

Report No.: STCS00490

SDG No.: STCS00490

Field Sample No.	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Error	Units	Anal Date	Sample Date	Sample Size	Yield	Detector ID	DQF	ASL
ANP0689001F	A6121889026	WATER	H3	-1.6E-01	0.6E-01	pCi/mL	12/18/89	11/29/89	10.0000		RML A6	U	3
ANP0889001F	A5120889037	WATER	H3	-2.2E-01	0.8E-01	pCi/mL	12/08/89	11/28/89	10.0000		RML A5	U	3
ANP0989001F	A6120489034	WATER	H3	-4E-02	7E-02	pCi/mL	12/04/89	12/04/89	10.0000		RML A6	U	3
FET0289001F	A6121589029	WATER	H3	-2.1E-01	0.7E-01	pCi/mL	12/15/89	11/30/89	10.0000		RML A6	U	3
FET0689002F	A5121889025	WATER	H3	-2.0E-01	0.7E-01	pCi/mL	12/18/89	11/29/89	10.0000		RML A5	U	3
TAN0189001F	A6120789033	WATER	H3	-1.4E-01	0.5E-01	pCi/mL	12/07/89	11/28/89	10.0000		RML A6	U	3
TAN0189002F	A6121189031	WATER	H3	-2.0E-01	0.7E-01	pCi/mL	12/11/89	11/28/89	10.0000		RML A6	U	3
TAN0289001F	A6121389025	WATER	H3	-1.6E-01	0.6E-01	pCi/mL	12/13/89	11/28/89	10.0000		RML A6	U	3
TAN0389001F	A5010290039	WATER	H3	-2.0E-01	1.0E-01	pCi/mL	01/02/90	12/18/89	10.0000		RML A5	U	3
TAN0389002F	A6010290040	WATER	H3	-2.0E-01	1.2E-01	pCi/mL	01/02/90	12/18/89	10.0000		RML A6	U	3
TAN0489001F	A5122189033	WATER	H3	9.E-01	2E-01	pCi/mL	12/21/89	12/05/89	10.0000		RML A5		3
TAN0589001F	A5121989019	WATER	H3	1.7E+00	0.4E+00	pCi/mL	12/19/89	12/06/89	10.0000		RML A5		3
TAN0889001F	A6121989020	WATER	H3	-1E-02	8E-02	pCi/mL	12/19/89	12/06/89	10.0000		RML A6	U	3

TABLE . . 1989 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR TRITIUM

Page 2 of 3

Date: 02/01/90

Lab Name: RML

Case No.: _____

Report No.: STCS00490

SDG No.: STCS00490

Field Sample No.	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Error	Units	Anal Date	Sample Date	Sample Size	Yield	Detector ID	DQF	ASL
TAN0989001F	A6122789039	WATER	H3	8.0E+00	0.6E+00	pCi/mL	12/27/89	12/11/89	10.0000		RML A6		3
TAN1089001F	A6011190040	WATER	H3	2.8E+00	0.3E+00	pCi/mL	01/11/90	01/11/90	10.0000		RML A6		3
TAN1089002F	A5011190039	WATER	H3	2.7E+00	0.3E+00	pCi/mL	01/11/90	01/11/90	10.0000		RML A5		3
TAN1189001F	A6122289040	WATER	H3	3.1E+00	0.5E+00	pCi/mL	12/22/89	12/14/89	10.0000		RML A6		3
TAN1189002F	A5122289039	WATER	H3	3.5E+00	0.6E+00	pCi/mL	12/22/89	12/14/89	10.0000		RML A5		3
TAND189002F	A6120889038	WATER	H3	2.0E+00	0.4E+00	pCi/mL	12/08/90	12/07/89	10.0000		RML A6		3
TAND289002F	A5122789038	WATER	H3	4.4E+00	0.7E+00	pCi/mL	12/27/89	12/11/89	10.0000		RML A5		3
TAND389001F	A5122889031	WATER	H3	-3.5E-01	0.2E-01	pCi/mL	12/28/89	12/13/89	10.0000		RML A5	U	3
TAND389002F	A5122989030	WATER	H3	-2.0E-01	1.1E-01	pCi/mL	12/29/89	12/13/89	10.0000		RML A5	U	3
TANEQ89005F	A6122889032	WATER	H3	-1.6E-01	0.8E-01	pCi/mL	12/28/89	12/11/89	10.0000		RML A6	U	3
TANEQ89006F	A6122989031	WATER	H3	3.0E-01	1.1E-01	pCi/mL	12/29/89	12/13/89	10.0000		RML A6		3
TANEQ8904F	A6122089017	WATER	H3	8E-02	8E-02	pCi/mL	12/20/89	12/05/89	10.0000		RML A6	U	3
TANTS89005F	A5012290028	WATER	H3	3.6E+00	0.2E+00	pCi/mL	01/22/90	01/16/90	10.0000		RML A5		3

3-9-92

TABLE . . . 1989 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR TRITIUM

Page 3 of 3

Date: 02/01/90

Lab Name: RML

Case No.: _____

Report No.: STCS00490

SDG No.: STCS00490

TABLE . . . 1989 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR STRONTIUM-90

Page 1 of 3

Date: 02/01/90Lab Name: RML

Case No.: _____

Report No.: STCS00490SDG No.: STCS00490

Field Sample No.	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Error	Units	Anal Date	Sample Date	Sample Size	Yield	Detector ID	DQF	ASL
ANP0689001H	A6121889026	WATER	SR-90	2E-03	2E-03	pCi/mL	12/18/89	11/29/89	500.0000	0.0	RML A6	U	3
ANP0889001H	A5120889037	WATER	SR-90	1E-03	2E-03	pCi/mL	12/08/89	12/04/89	500.0000	0.0	RML A5	U	3
ANP0989001H	A6120489034	WATER	SR-90	-1E-03	2E-03	pCi/mL	12/04/89	12/04/89	500.0000	0.0	RML A6	U	3
FET0289001H	A6121589029	WATER	SR-90	7E-04	23E-04	pCi/mL	12/15/89	11/30/89	500.0000	0.0	RML A6	U	3
JET0689002H	A5121889025	WATER	SR-90	2E-03	2E-03	pCi/mL	12/18/89	11/29/89	500.0000	0.0	RML A5	U	3
TAN0189001H	A6120789033	WATER	SR-90	1.0E-02	0.2E-02	pCi/mL	12/07/89	11/28/89	500.0000	0.0	RML A6	R	3
TAN0189002H	A6121189031	WATER	SR-90	4E-03	2E-03	pCi/mL	12/11/89	11/28/89	500.0000	0.0	RML A6	—	3
TAN0289001H	A6121389025	WATER	SR-90	4E-03	2E-03	pCi/mL	12/13/89	11/28/89	500.0000	0.0	RML A6	—	3
TAN0389001H	A5010290039	WATER	SR-90	2E-03	3E-03	pCi/mL	01/02/90	12/18/89	500.0000	0.0	RML A5	U	3
TAN0389002H	A6010290040	WATER	SR-90	8E-04	19E-04	pCi/mL	01/02/90	12/18/89	500.0000	0.0	RML A6	U	3
TAN0489001H	A5122189033	WATER	SR-90	2E-03	2E-03	pCi/mL	12/21/89	12/05/89	500.0000	0.0	RML A5	U	3
TAN0589001H	A5121989019	WATER	SR-90	1E-03	2E-03	pCi/mL	12/19/89	12/06/89	500.0000	0.0	RML A5	U	3
TAN0889001H	A6121989020	WATER	SR-90	3E-03	2E-03	pCi/mL	12/19/89	12/06/89	500.0000	0.0	RML A6	U	3

4-1-92

TABLE . . 1989 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR STRONTIUM-90

Page 2 of 3

Date: 02/01/90

Lab Name: RML

Case No.: _____

Report No.: STCS00490

SDG No.: STCS00490

Field Sample No.	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Error	Units	Anal Date	Sample Date	Sample Size	Yield	Detector ID	DQF	ASL
TAN0989001H	A6122789039	WATER	SR-90	1.5E-02	0.3E-02	pCi/mL	12/27/89	12/11/89	500.0000	0.0	RML A6		3
TAN1089001H	A6011190040	WATER	SR-90	7.6E-02	0.7E-02	pCi/mL	01/11/90	01/11/90	500.0000	0.0	RML A6		3
TAN1089002H	A5011190039	WATER	SR-90	7.5E-02	0.8E-02	pCi/mL	01/11/90	01/11/90	500.0000	0.0	RML A5		3
TAN1189001H	A6122289040	WATER	SR-90	6E-03	2E-03	pCi/mL	12/22/89	12/14/89	500.0000	0.0	RML A6		3
TAN1189002H	A5122289039	WATER	SR-90	3E-03	2E-03	pCi/mL	12/22/89	12/14/89	500.0000	0.0	RML A5	U	3
TAND189002H	A6120889038	WATER	SR-90	1E-04	24E-04	pCi/mL	12/08/89	12/07/89	500.0000	0.0	RML A6	U	3
TAND289002H	A5122789038	WATER	SR-90	2.3E-01	0.2E-01	pCi/mL	12/27/89	12/11/89	500.0000	0.0	RML A5		3
TAND389001H	A5122889031	WATER	SR-90	-2E-03	2E-03	pCi/mL	12/28/89	12/13/89	500.0000	0.0	RML A5	U	3
TAND389002H	A5122989030	WATER	SR-90	-2E-03	2E-03	pCi/mL	12/29/89	12/13/89	500.0000	0.0	RML A5	U	3
TANEQ89005H	A6122889032	WATER	SR-90	9E-04	20E-04	pCi/mL	12/28/89	12/11/89	500.0000	0.0	RML A6	U	3
TANEQ89006H	A6122989031	WATER	SR-90	4E-03	2E-03	pCi/mL	12/29/89	12/13/89	500.0000	0.0	RML A6		3
TANEQ8904H	A6122089017	WATER	SR-90	2E-04	19E-04	pCi/mL	12/20/89	12/05/89	500.0000	0.0	RML A6	U	3
TANTS89005H	A5012290028	WATER	SR-90	4E-03	2E-03	pCi/mL	01/22/90	01/16/90	500.0000	0.0	RML A5		3

3-9-92

TABLE . . 1989 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR STRONTIUM-90

Page 3 of 3

Date: 02/01/90

Lab Name: RML

Case No.: _____

Report No.: STCS00490

SDG No.: STCS00490

APPENDIX D

VALIDATED FY-90 GROUNDWATER ANALYTICAL RESULTS

DATA QUALIFIER DEFINITIONS

Organic Analysis Data Flags

- A - Indicates that a Tentatively Identified Compound is a suspected aldol-condensation product.
- B - Used when the analyte is found in the associated blank as well as in the sample.
- C - Applies to pesticide results where the identification has been confirmed by GC/MS.
- D - Identifies all compounds identified in an analysis at a secondary dilution factor.
- E - Identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis
- J - Indicates as estimated value.
- U - Indicates compound was analyzed for but not detected.

Organic Validation Data Qualifiers

- J - The analyte was positively identified in the sample, but the associated numerical value may not be an accurate representation of the amount actually present in the environmental sample. The data should be seriously considered for decision making and are usable for many purposes.
- N - Presumptive evidence of the presence of the material.
- NJ - Presumptive evidence of the presence of the material at an estimated quantity.
- R - The data are unusable (may or may not be present). Resampling and reanalysis is necessary for verification.
- U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
- UJ - The material was analyzed for, but was not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFIER DEFINITIONS

Inorganic Analysis Data Flags

- B - Value is less than the CRDL, but greater than the IDL.
- E - Value is estimated because of the presence of interference.
- N - Spiked sample recovery not within control limits.
- NR - Analyte was not required to be analyzed.
- S - Value was determined by the method of standard additions (MSA).
- U - Analyte was analyzed for but not detected.
- W - Post-digestion spike for Furnace AA analysis is out of control limits (85% to 115%), while sample absorbance is less than 50% of spike absorbance.
- * - Duplicate analysis not within control limits.

Methods

- A - Flame AA.
- CV - Manual Cold Vapor AA.
- F - Furnace AA.
- NR - Not run, analyte not required to be analyzed.
- P - Inductively Couple Plasma-Atomic Emission Spectrometry.

Inorganic Validation Data Qualifiers

- J - The analyte was analyzed for and was positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- R - The data are unusable.
- U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
- UJ - The material was analyzed for, but was not detected. The associated value is an estimate and may not accurately reflect the instrument detection limit in the sample matrix.

Reference: Environmental Restoration Department, Sample Management Office—Standard Operating Procedures 12.1.4 and 12.1.5 (EG&G, Idaho).

SW-846 Method 8240

PRACTICAL QUANTITATION LIMITS (PQL) FOR VOLATILE ORGANICS

Volatile	CAS Number	Practical Quantitation Limits	
		Groundwater	Low Soil/Sediment
		ug/L	ug/Kg
1. Chloromethane	74-87-3	10	10
2. Bromomethane	74-83-9	10	10
3. Vinyl Chloride	75-01-4	10	10
4. Chloroethane	75-00-3	10	10
5. Methylene Chloride	75-09-2	5	5
6. Acetone	67-64-1	100	100
7. Carbon Disulfide	75-15-0	5	5
8. 1,1-Dichloroethene	75-35-4	5	5
9. 1,1-Dichloroethane	75-35-3	5	5
10. trans-1,2-Dichloroethene	156-60-5	5	5
11. Chloroform	67-66-3	5	5
12. 1,2-Dichloroethane	107-06-2	5	5
13. 2-Butanone	78-93-3	100	100
14. 1,1,1-Trichloroethane	71-55-6	5	5
15. Carbon Tetrachloride	56-23-5	5	5
16. Vinyl Acetate	108-05-4	50	50
17. Bromodichloromethane	75-27-4	5	5
18. 1,1,2,2-Tetrachloroethane	79-34-5	5	5
19. 1,2-Dichloropropane	78-87-5	5	5
20. trans-1,3-Dichloropropene	10061-02-6	5	5
21. Trichloroethene	79-01-6	5	5
22. Dibromochloromethane	124-48-1	5	5
23. 1,1,2-Trichloroethane	79-00-5	5	5
24. Benzene	71-43-2	5	5
25. cis-1,3-Dichloropropene	10061-01-5	5	5
26. 2-Chloroethyl Vinyl Ether	110-75-8	10	10
27. Bromoform	75-25-2	5	5
28. 2-Hexanone	591-78-6	50	50
29. 4-Methyl-2-pentanone	108-10-1	50	50
30. Tetrachloroethene	127-18-4	5	5

SW-846 Method 6010-Inorganics

RECOMMENDED WAVELENGTHS AND ESTIMATED INSTRUMENTAL DETECTION LIMITS

Element	Wavelength ^a (nm)	Estimated Detection Limit ^b (ug/L)
Aluminum	308.215	45
Antimony	206.833	32
Arsenic	193.696	53
Barium	455.403	2
Beryllium	313.042	0.3
Boron	249.773	5
Cadmium	226.502	4
Calcium	317.933	10
Chromium	267.716	7
Cobalt	228.616	7
Copper	324.754	6
Iron	259.940	7
Lead	220.353	42
Magnesium	279.079	30
Manganese	257.610	2
Molybdenum	202.030	8
Nickel	231.604	15
Potassium	766.491	-- ^c
Selenium	196.026	75
Silicon	288.158	58
Silver	328.068	7
Sodium	588.995	29
Thallium	190.864	40
Vanadium	292.402	8
Zinc	213.856	2

a. The wavelengths listed are recommended because of their sensitivity and overall acceptance. Other wavelengths may be substituted if they can provide the needed sensitivity and are treated with the same corrective techniques for spectral interference. In time, other elements may be added as more information becomes available and as required.

b. The estimated instrumental detection limits shown are taken from Reference 1 in Section 10.0 (SW-846 3rd Edition). They are given as a guide for an instrumental limit. The actual method detection limits are sample dependent and may vary as the sample matrix varies.

c. Highly dependent on operating conditions and plasma position.

Note: Mercury was analyzed using SW-846 Method 7470.

1990 TAN Hydrogeologic Investigation S&A Data Document • November 1991

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA

Page 1 of 6

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN ANP-06 ANP0690001A REGIONAL AQUIFER WATER ug/L 9011L778	TAN ANP-08 ANP0890001A REGIONAL AQUIFER WATER ug/L 9010L225	TAN ANP-09 ANP0990001A REGIONAL AQUIFER WATER ug/L 9012L818	TAN FET-02 FET0290001A REGIONAL AQUIFER WATER ug/L 9010L225	TAN IET-06 IET0690001A REGIONAL AQUIFER WATER ug/L 9011L778	TAN IET-06 IET0690002A REGIONAL AQUIFER WATER ug/L 9011L778	TAN TAN-01 TAN0190001A REGIONAL AQUIFER WATER ug/L 9010L225
<u>TARGET COMPOUNDS</u>							
Chloromethane	---	---	---	---	---	---	---
Methylene Chloride	---	---	---	---	---	---	---
Acetone	---	---	---	---	---	---	---
Carbon Disulfide	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---
1,2-Dichloroethene_(total)	---	---	---	---	---	---	---
2-Butanone	---	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	---	---	---	---	---
Trichloroethene	---	7	---	---	---	---	8
Dilution Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	7(14)d	7(14)d	9(14)d	7(14)d	8(14)d	8(14)d	4(14)d

6-25-92

D-7

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA (Continued)

Page 2 of 6

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN-02 REGIONAL AQUIFER TAN0290001A	TAN-03 REGIONAL AQUIFER TAN0390001A	TAN-04 REGIONAL AQUIFER TAN0490001A	TAN-05 REGIONAL AQUIFER TAN0590001A	TAN-06 REGIONAL AQUIFER TAN0690001A	TAN-07 REGIONAL AQUIFER TAN0790001A	TAN-07 REGIONAL AQUIFER TAN0790002A
	WATER ug/L 9010L225	WATER ug/L 9011L778	WATER ug/L 9010L225	WATER ug/L 9010L225	WATER ug/L 9011L778	WATER ug/L 9011L778	WATER ug/L 9011L778
TARGET COMPOUNDS							
Chloromethane	---	---	---	---	---	---	---
Methylene Chloride	---	---	---	---	26 B	---	---
Acetone	---	---	---	---	9 JB	---	---
Carbon Disulfide	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---
1,2-Dichloroethene_(total)	---	---	---	---	---	---	---
2-Butanone	---	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	3 J	2 J	---	---	---
Trichloroethene	2 J	---	73	100	---	---	---
Tetrachloroethene	---	---	24	28	---	---	---
Toluene	---	---	---	---	---	---	---
Dilution Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	7(14)d	7(14)d	3(14)d	11(14)d	8(14)d	7(14)d	7(14)d

D
8

6-25-92

1990 TAN Hydrogeologic Investigation S&A Data Document · November 1991

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA (Continued)

Page 3 of 6

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN TAN-08 REGIONAL AQUIFER TAN0890001A WATER ug/L <u>9012L038</u>	TAN TAN-09 REGIONAL AQUIFER TAN0990001A WATER ug/L <u>9011L778</u>	TAN TAN-09 REGIONAL AQUIFER TAN0990002A WATER ug/L <u>9011L778</u>	TAN TAN-10A REGIONAL AQUIFER TAN10A9002A WATER ug/L <u>9010L225</u>	TAN TAN-11 REGIONAL AQUIFER TAN1190001A WATER ug/L <u>9010L225</u>	TAN TAN-12 REGIONAL AQUIFER TAN1290001A WATER ug/L <u>9010L225</u>	TAN TAN-13A REGIONAL AQUIFER TAN13A9001A WATER ug/L <u>9011L778</u>
TARGET COMPOUNDS							
Chloromethane	---	---	---	---	---	1 J	---
Methylene Chloride	---	---	---	---	---	---	---
Acetone	---	---	---	---	---	---	---
Carbon Disulfide	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---
1,2-Dichloroethene (total)	---	2 J	2 J	---	---	---	---
2-Butanone	---	---	---	---	---	---	10 UR
1,1,1-Trichloroethane	---	---	---	---	---	---	---
Trichloroethene	---	90	90	18	75	39	---
Tetrachloroethene	---	20	19	6	21	13	---
Toluene	---	---	---	---	---	---	---
Dilution Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	8(14)d	7(14)d	7(14)d	8(14)d	8(14)d	3(14)d	9(14)d

6-25-92

D-9

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA (Continued)

Page 4 of 6

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN TAN-13A REGIONAL AQUIFER TAN13A9002A WATER ug/L 9011L778	TAN TAN-14 REGIONAL AQUIFER TAN1490001A WATER ug/L 9010L225	TAN TAN-14 REGIONAL AQUIFER TAN1490002A WATER ug/L 9010L225	TAN TAN-15 REGIONAL AQUIFER TAN1590001A WATER ug/L 9010L225	TAN TAN-16 REGIONAL AQUIFER TAN1690001A WATER ug/L 9010L225	TAN TAN-16 REGIONAL AQUIFER TAN1690002A WATER ug/L 9010L225	TAN TAN-17 REGIONAL AQUIFER TAN1790001A WATER ug/L 9012L818
TARGET COMPOUNDS							
Chloromethane	---	---	---	---	---	---	---
Methylene Chloride	---	---	---	---	---	---	---
Acetone	---	---	---	---	---	---	---
Carbon Disulfide	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---
1,2-Dichloroethene_(total)	---	---	---	---	---	---	---
2-Butanone	10 UR	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	---	---	---	---	---
Trichloroethene	---	---	---	32	41	40	---
Tetrachloroethene	---	---	---	8	9	9	---
Toluene	1 J	---	---	---	---	---	---
Dilution Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	9(14)d	4(14)d	4(14)d	11(14)d	8(14)d	8(14)d	9(14)d

6-25-92

D-10

1990 TAN Hydrogeologic Investigation S&A Data Document • November 1991

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA (Continued)

Page 5 of 6

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN TAN DISP 1 REGIONAL AQUIFER TAND190001A WATER ug/L 9011L778	TAN TAN DISP 2 REGIONAL AQUIFER TAND290001A WATER ug/L 9010L225	TAN TAN DISP 3 REGIONAL AQUIFER TAND390001A WATER ug/L 9011L778	TAN GIN-2 REGIONAL AQUIFER TANG290001A WATER ug/L 9012L818	TAN GIN-4 REGIONAL AQUIFER TANG490001A WATER ug/L 9011L778	TAN USGS-24 REGIONAL AQUIFER TANGS24911A WATER ug/L 9101L125	TAN USGS-24 REGIONAL AQUIFER TANGS24911ADL WATER ug/L 9101L125
TARGET COMPOUNDS							
Chloromethane	---	---	---	---	---	---	---
Methylene Chloride	---	---	---	---	---	---	---
Acetone	---	---	---	---	---	---	---
Carbon Disulfide	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	7	---
1,1-Dichloroethane	---	---	---	---	---	1 J	---
1,2-Dichloroethene_(total)	2 J	14	---	---	---	47	---
2-Butanone	---	10 UR	---	10 UR	10 UR	---	---
1,1,1-Trichloroethane	---	---	---	---	---	11	---
Trichloroethene	140	240	---	3 J	2 J	0 E	720
Dilution Factor	1.000	1.000	1.000	1.000	1.000	1.000	5.000
Total (Allowed) Hold Time	9(14)d	6(14)d	13(14)d	9(14)d	8(14)d	7(14)d	8(14)d

D-11

6-25-92

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - VOLATILE ORGANIC DATA (Continued)

Page 6 of 6

AREA	TAN
LOCATION	USGS-26
TYPE OF LOCATION	REGIONAL AQUIFER
SAMPLE NUMBER	USG2690001A
MEDIA	WATER
UNITS	ug/L
SDG NUMBER	9011L778

TARGET COMPOUNDS

Chloromethane	---
Methylene Chloride	---
Acetone	---
Carbon Disulfide	---
1,1-Dichloroethene	---
1,1-Dichloroethane	---
1,2-Dichloroethene_(total)	---
2-Butanone	---
1,1,1-Trichloroethane	---
Trichloroethene	---
Tetrachloroethene	---
Toluene	---
Dilution Factor	1.000
Total (Allowed) Hold Time	8(14)d

D-12

6-25-92

1990 TAN Hydrogeologic Investigation S&A Data Document · November 1991

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA

Page 1 of 7

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN ANP-06 REGIONAL AQUIFER ANP0690001B WATER ug/L ANP0690001B	TAN ANP-08 REGIONAL AQUIFER ANP0890001B WATER ug/L ANP0890001B	TAN ANP-09 REGIONAL AQUIFER ANP0990001B WATER ug/L ANP0990001B	TAN FET-02 REGIONAL AQUIFER FET0290001B WATER ug/L ANP0890001B	TAN IET-06 REGIONAL AQUIFER IET0690001B WATER ug/L ANP0690001B
ANALYTES					
Aluminum	67.0 B	112 B	---	124 B	75.0 B
Antimony	8.0 BUJ	---	4.0 UNWUJ	---	5.3 BU
Arsenic	2.4 B	---	---	---	---
Barium	80.0 B	109 BEJ	105 B	99.0 BEJ	136 B
Beryllium	---	---	---	---	---
Cadmium	---	---	---	---	---
Calcium	46400	48200 EJ	38800	45400 EJ	56800
Chromium	---	17.0	---	---	---
Cobalt	---	---	---	---	---
Copper	17.0 B	82.0	---	19.0 B	---
Iron	177	374 U	300 NUJ	---	298
Lead	7.1	14.7	6.1 U	2.2 BU	9.1
Magnesium	17300	15700	15900	16000	15400
Manganese	---	---	10.0 BU	---	206
Mercury	0.10 BU	---	---	0.11 B	0.12 BU
Nickel	---	---	---	---	---
Potassium	1980 B	2680 B	3120 B	2100 B	3430 B
Selenium	2.0 UNUJ	---	---	2.0 UNUJ	2.0 UNUJ
Silver	---	---	---	---	---
Sodium	11600	9100	16500	8900	23200
Thallium	---	---	---	---	---
Vanadium	12.0 UWJ	---	7.0 UJ	12.0 B	13.0 BJ
Zinc	---	228	---	22.0	118
Total (Allowed) Hold Time ^a	29(180)d	40(180)d	9(180)d	40(180)d	30(180)d
Total (Allowed) Hold Time ^b	7(26)d	20(26)d	10(26)d	20(26)d	8(26)d
Total (Allowed) Hold Time ^c	29(180)d	40(180)d	9(180)d	40(180)d	30(180)d

- a. ICP/FAAS
 b. CVAAS
 c. GFAAS

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN IET-06 REGIONAL AQUIFER TET0690002B WATER ug/L ANP0690001B	TAN TAH-01 REGIONAL AQUIFER TAN0190001B WATER ug/L ANP0890001B	TAN TAN-02 REGIONAL AQUIFER TAN0290001B WATER ug/L ANP0890001B	TAN TAN-03 REGIONAL AQUIFER TAN0390001B WATER ug/L ANP0690001B	TAN TAN-04 REGIONAL AQUIFER TAN0490001B WATER ug/L ANP0890001B
ANALYTES					
Aluminum	---	138 B	106 B	---	90.0 B
Antimony	6.2 BUJ	---	---	7.2 BUJ	---
Arsenic	2.0 UW	---	2.0 UW	2.7 B	---
Barium	133 B	121 BEJ	111 BEJ	119 B	181 BEJ
Beryllium	---	---	---	---	---
Cadmium	---	---	---	---	---
Calcium	55600	51600 EJ	45600 EJ	59800	53600 EJ
Chromium	---	---	---	---	---
Cobalt	---	---	---	---	---
Copper	---	236	---	25.0	27.0
Iron	295	85.0 BU	302 U	450	483
Lead	10.0	3.2 UW	1.1 BU	4.8	3.2 U
Magnesium	15000	16900	14700	14600	16000
Manganese	200	---	33.0	11.0 B	81.0
Mercury	0.13 BU	0.12 B	0.10 B	0.19 BU	0.32
Nickel	---	---	---	---	---
Potassium	3330 B	2090 B	1880 B	2100 B	2640 B
Selenium	2.0 UWUJ	2.0 UW	---	2.0 UWUJ	2.0 UW
Silver	---	---	---	---	---
Sodium	22600	8570	7680	8400	10200
Thallium	---	---	---	---	---
Vanadium	12.0 UWUJ	---	---	12.0 UWUJ	---
Zinc	116	25.0	64.0	449	560
Total (Allowed) Hold Time ^a	30(180)d	40(180)d	40(180)d	27(180)d	41(180)d
Total (Allowed) Hold Time ^b	8(26)d	20(26)d	20(26)d	5(26)d	21(26)d
Total (Allowed) Hold Time ^c	30(180)d	40(180)d	40(180)d	27(180)d	41(180)d

a. ICP/FAAS

b. CVAAS

c. GFAAS

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN-05 REGIONAL AQUIFER TAN0590001B WATER ug/L ANP0890001B	TAN-06 REGIONAL AQUIFER TAN0690001B WATER ug/L ANP0690001B	TAN-07 REGIONAL AQUIFER TAN0790001B WATER ug/L ANP0690001B	TAN-07 REGIONAL AQUIFER TAN0790002B WATER ug/L ANP0690001B	TAN-08 REGIONAL AQUIFER TAN0890001B WATER ug/L TAN0890001B
ANALYTES					
Aluminum	109 B	811	116 B	171 B	---
Antimony	---	---	---	---	4.0 UNUJ
Arsenic	2.0 UW	---	---	2.0 UW	---
Barium	129 BEJ	108 B	117 B	114 B	101 B
Beryllium	---	---	---	---	---
Cadmium	---	---	---	---	---
Calcium	54600 EJ	48700	45600	48300	52600
Chromium	---	---	---	---	---
Cobalt	---	---	---	---	---
Copper	32.0	52.0	22.0 B	24.0 B	19.0 B
Iron	204 U	1680	78.0 BU	106 U	1610
Lead	15.4 S	8.3 SU	2.4 BWU	4.0 MUJ	28.4
Magnesium	15900	18000	16300	15800	13900
Manganese	---	39.0	---	---	23.0
Mercury	---	---	0.12 BU	0.11 BU	---
Nickel	---	---	---	---	15.0 B
Potassium	1930 B	3010 B	2280 B	2220 B	2470
Selenium	---	2.8 BW	2.0 UW	2.0 UW	5.0 UNR
Silver	---	---	---	---	---
Sodium	9950	10500	8630	8430	7620
Thallium	---	---	---	---	---
Vanadium	---	---	---	---	---
Zinc	244	460	194	193	406
Total (Allowed) Hold Time ^a	39(180)d	33(180)d	32(180)d	32(180)d	15(180)d
Total (Allowed) Hold Time ^b	19(26)d	13(26)d	12(26)d	12(26)d	16(26)d
Total (Allowed) Hold Time ^c	39(180)d	33(180)d	32(180)d	32(180)d	15(180)d

a. ICP/FAAS

b. CVAAS

c. GFAAS

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN-09 REGIONAL AQUIFER TAN0990001B WATER ug/L ANP0690001B	TAN-09 REGIONAL AQUIFER TAN0990002B WATER ug/L ANP0690001B	TAN-10A REGIONAL AQUIFER TAN10A9002B WATER ug/L ANP0890001B	TAN-11 REGIONAL AQUIFER TAN1190001B WATER ug/L ANP0890001B	TAN-12 REGIONAL AQUIFER TAN1290001B WATER ug/L ANP0890001B
ANALYTICS					
Aluminum	89.0 B	126 B	178 B	123 B	1820
Antimony	6.0 MUJ	6.8 MUJ	---	---	---
Arsenic	---	---	2.0 UW	2.0 UW	---
Barium	286	303	238 EJ	120 BEJ	76.0 BEJ
Beryllium	---	---	---	---	---
Cadmium	---	---	---	---	---
Calcium	86800	92600	83500 EJ	47800 EJ	46400 EJ
Chromium	---	---	---	---	---
Cobalt	---	---	---	---	---
Copper	19.0 B	---	26.0	21.0 B	19.0 B
Iron	324	330	563	2300	1340
Lead	10.3	2.7 B	14.6 S	4.6 MU	5.1 MU
Magnesium	24600	26400	24300 B	20400	20000
Manganese	12.0 B	13.0 B	44.0	26.0	25.0
Mercury	---	---	---	---	---
Nickel	---	---	---	---	---
Potassium	4480 B	4680 B	3220 B	3260 B	3190 B
Selenium	---	---	2.0 MUJ	---	---
Silver	---	---	---	---	---
Sodium	42200	45500	31600	17400	11600
Thallium	---	1.0 MUJ	---	---	---
Vanadium	12.0 MUJ	12.0 MUJ	12.0	13.0 B	---
Zinc	526	540	341	461	248
Total (Allowed) Hold Time ^a	21(180)d	21(180)d	34(180)d	35(180)d	41(180)d
Total (Allowed) Hold Time ^b	12(26)d	12(26)d	14(26)d	15(26)d	21(26)d
Total (Allowed) Hold Time ^c	21(180)d	21(180)d	34(180)d	35(180)d	41(180)d

- a. ICP/FAAS
 b. CVAAS
 c. GFAAS

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN TAN-13A REGIONAL AQUIFER TAN13A9001B	TAN TAN-13A REGIONAL AQUIFER TAN13A9002B	TAN TAN-14 REGIONAL AQUIFER TAN1490001B	TAN TAN-14 REGIONAL AQUIFER TAN1490002B	TAN TAN-15 REGIONAL AQUIFER TAN1590001B
ANALYTES					
Aluminum	92.0 B	129 B	5490	4380	110 B
Antimony	4.0 UNWUJ	4.0 UNWUJ	---	---	---
Arsenic	---	---	2.2 B	2.0 BWJ	2.0 UW
Barium	95.0 B	94.0 B	76.0 BEJ	73.0 BEJ	123 BEJ
Beryllium	---	---	---	---	---
Cadmium	---	---	---	---	---
Calcium	41100	41100	37800 EJ	37100 EJ	45800 EJ
Chromium	---	---	20.0	10.0	21.0
Cobalt	---	---	---	---	---
Copper	---	---	49.0	46.0	---
Iron	118 NUJ	119 NUJ	7530	5260	86.0 BU
Lead	1.7 BU	1.7 BU	7.9 MU	13.2 S	4.5 WU
Magnesium	10900	11000	17500	16000	17200
Manganese	15.0 U	16.0 U	115	84.0	---
Mercury	---	---	---	---	---
Nickel	---	---	36.0 B	---	---
Potassium	2180 B	2170 B	3960 B	4040 B	2630 B
Selenium	---	2.0 UW	---	2.0 UNUJ	---
Silver	---	---	---	---	---
Sodium	6830	6660	7620	7560	8270
Thallium	---	---	---	---	---
Vanadium	7.0 UJ	---	---	12.0 B	12.0 B
Zinc	654	639	142	122	173
Total (Allowed) Hold Time ^a	16(180)d	20(180)d	42(180)d	42(180)d	39(180)d
Total (Allowed) Hold Time ^b	8(26)d	12(26)d	22(26)d	22(26)d	19(26)d
Total (Allowed) Hold Time ^c	16(180)d	20(180)d	42(180)d	42(180)d	39(180)d

a. ICP/F/AAS

b. CVAAS

c. GFAAS

D-17

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA (Continued)

AREA	TAN	TAN	TAN	TAN	TAN	TAN
LOCATION	TAN-16	TAN-16	TAN-17	TAN DISP 1	TAN DISP 1	TAN
TYPE OF LOCATION	REGIONAL AQUIFER					
SAMPLE NUMBER	TAN1690001B	TAN1690002B	TAN1790001B	TAND190001B	TAND290001B	TAN
MEDIA	WATER	WATER	WATER	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
SDG NUMBER	ANP0890001B	ANP0890001B	ANP0990001B	ANP0690001B	ANP0890001B	ANP0890001B
ANALYTES						
Aluminum	161 B	155 B	14800	199 B	328	
Antimony	---	---	4.0 UNWJJ	---	---	
Arsenic	2.0 UMJJ	2.0 UM	4.2 B	2.0 UMJJ	2.3 BW	
Barium	113 BEJ	114 BEJ	200	95.0 B	280 EJ	
Beryllium	---	---	1.0 B	---	---	
Cadmium	---	---	---	---	---	
Calcium	48000 EJ	47200 EJ	70000	456	81800 EJ	
Chromium	---	12.0	45.0	---	---	
Cobalt	---	---	---	---	---	
Copper	28.0	---	146	21.0 B	150	
Iron	118 U	82.0 BU	7290 NJ	3200	641	
Lead	3.8 WU	3.5 WU	17.7	11.3 S	515	
Magnesium	16000	16300	12700	19700	23000	
Manganese	---	---	95.0	35.0	66.0	
Mercury	0.10 B	---	---	0.11 BU	---	
Nickel	---	---	69.0	---	---	
Potassium	2510 B	2400 B	5740	3870 B	4140 B	
Selenium	2.0 UW	---	10.0 UNWJJ	---	2.0 UW	
Silver	---	---	1.2 B	---	---	
Sodium	8180	7990	15600	14000	68600	
Thallium	---	---	3.1 BS	---	---	
Vanadium	12.0 B	---	---	---	---	
Zinc	117	105	536	53.0	225	
Total (Allowed) Hold Time ^a	34(180)d	34(180)d	13(180)d	33(180)d	46(180)d	
Total (Allowed) Hold Time ^b	14(26)d	14(26)d	5(26)d	13(26)d	26(26)d	
Total (Allowed) Hold Time ^c	34(180)d	34(180)d	13(180)d	33(180)d	46(180)d	

- D-18
- a. ICP/FAAS
 - b. CVAAS
 - c. GFAAS

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN TAN DISP 3 REGIONAL AQUIFER TAN0390001B WATER ug/L ANP0690001B	TAN GIN-2 REGIONAL AQUIFER TANG290001B WATER ug/L ANP0990001B	TAN GIN-4 REGIONAL AQUIFER TANG490001B WATER ug/L ANP0990001B	TAN USGS-24 REGIONAL AQUIFER TANGS24911B WATER ug/L TANGS24911B	TAN USGS-26 REGIONAL AQUIFER USG2690001B WATER ug/L ANP0690001B
ANALYTES					
Aluminum	81.0 B	146 B	507	---	---
Antimony	4.3 BUJJ	4.0 UNWUJJ	4.0 UNWUJJ	4.0 UJJ	5.2 BUJJ
Arsenic	2.1 B	---	---	2.0 B	---
Barium	105 B	183 B	183 B	220	52.0 B
Beryllium	---	---	---	---	---
Cadmium	---	---	---	---	---
Calcium	54800	63000	65000	80500	43700
Chromium	---	---	11.0 U	---	---
Cobalt	---	---	---	---	---
Copper	---	---	---	---	---
Iron	204	128 HUJJ	728 NJ	123	222
Lead	5.4	43.8	1.4 BU	7.8	2.1 B
Magnesium	16000	21400 B	23600 B	18500	15800
Manganese	---	7.0 BU	18.0 U	3.0 UJJ	---
Mercury	---	0.16 BU	0.12 BU	0.12 BU	0.14 BU
Nickel	---	---	---	---	---
Potassium	2640 B	3750 B	4100 B	2860 B	2950 B
Selenium	2.0 UNWUJJ	2.1 BU	2.3 BUJJ	1.0 UNWUJJ	10.0 UW
Silver	---	---	---	---	---
Sodium	8330	20600	17900	27000	17100
Thallium	---	2.9 B	---	---	---
Vanadium	12.0 UJJ	---	---	7.0 UJJ	12.0 UJJ
Zinc	17.0 B	---	---	---	---
Total (Allowed) Hold Time ^a	22(180)d	14(180)d	15(180)d	6(180)d	28(180)d
Total (Allowed) Hold Time ^b	13(26)d	6(26)d	7(26)d	15(26)d	6(26)d
Total (Allowed) Hold Time ^c	22(180)d	14(180)d	15(180)d	6(180)d	28(180)d

a. ICP/FAAS

b. CVAAS

c. GFAAS

D-19

1990 TAN Hydrogeologic Investigation S&A Data Document • November 1991

TABLE _._._ 1990 TAN HYDROGEOLOGIC INVESTIGATION - NON-METAL INORGANIC DATA

Page 1 of 7

AREA LOCATION	TAN ANP-06	TAN ANP-08	TAN ANP-09	TAN FET-02	TAN IET-06	TAN IET-06
TYPE OF LOCATION	REGIONAL AQUIFER					
SAMPLE NUMBER	ANP0690001	ANP0890001	ANP0990001	FET0290001	IET0690001	IET0690002
MEDIA	WATER	WATER	WATER	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
SDG NUMBER	ANP0690001B	ANP0890001B	ANP0990001B	ANP0890001B	ANP0690001B	ANP0690001B
ANALYTES						
Alkalinity	146000	142000	122000	142000	164000	160000
Chloride	10800	10700	10700	15000	23500	23700
Fluoride	370	340	500	370	330	320
Nitrate	668	853	673	735	315	350
Sulfate	22000	25000	1600000	26000	22000	22000
Total (Allowed) Hold Time						
Alkalinity	13(14)d	13(14)d	14(14)d	13(14)d	14(14)d	14(14)d
Chloride	13(28)d	6(28)d	10(28)d	6(28)d	14(28)d	14(28)d
Fluoride	7(28)d	20(28)d	23(28)d	20(28)d	8(28)d	8(28)d
Nitrate	14(28)d	14(28)d	10(28)d	14(28)d	15(28)d	15(28)d
Sulfate	11(28)d	13(28)d	15(28)d	13(28)d	12(28)d	12(28)d

1990 TAN Hydrogeologic Investigation S&A Data Document - November 1991

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - NON-METAL INORGANIC DATA (Continued)

Page 2 of 7

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN TAN-01 REGIONAL AQUIFER TAN0190001	TAN TAN-02 REGIONAL AQUIFER TAN0290001	TAN TAN-03 REGIONAL AQUIFER TAN0390001	TAN TAN-03 REGIONAL AQUIFER TAN0390EQ1	TAN TAN-04 REGIONAL AQUIFER TAN0490001	TAN TAN-05 REGIONAL AQUIFER TAN0590001
	WATER ug/L ANP0890001B	WATER ug/L ANP0890001B	WATER ug/L ANP0690001B	WATER ug/L ANP0690001B	WATER ug/L ANP0890001B	WATER ug/L ANP0890001B
ANALYTES						
Alkalinity	144000	143000	160000	---	152000	149000
Chloride	26100	11500	11400	276	26900	29500
Fluoride	330	330	330	130	330	310
Nitrate	1520	877	832	---	1700	998
Sulfate	26000	26000	21000	---	19000	23000
Total (Allowed) Hold Time						
Alkalinity	13(14)d	13(14)d	11(14)d	11(14)d	13(14)d	12(14)d
Chloride	6(28)d	6(28)d	15(28)d	15(28)d	6(28)d	5(28)d
Fluoride	20(28)d	20(28)d	5(28)d	5(28)d	20(28)d	19(28)d
Nitrate	14(28)d	14(28)d	18(28)d	18(28)d	14(28)d	13(28)d
Sulfate	13(28)d	13(28)d	13(28)d	13(28)d	13(28)d	12(28)d

1990 TAN Hydrogeologic Investigation S&A Data Document - November 1991

TABLE _._. 1990 TAN HYDROGEOLOGIC INVESTIGATION - NON-METAL INORGANIC DATA (Continued)

Page 3 of 7

AREA	TAN						
LOCATION	TAN-06	TAN-07	TAN-07	TAN-08	TAN-09	TAN-09	TAN
TYPE OF LOCATION	REGIONAL AQUIFER						
SAMPLE NUMBER	TAN0690001	TAN0790001	TAN0790002	TAN0890001	TAN0990001	TAN0990002	TAN
MEDIA	WATER						
UNITS	ug/L						
SDG NUMBER	ANP0690001B						
ANALYTES							
Alkalinity	148000	145000	146000	122000	192000	194000	
Chloride	7460	11300	11200	35700	128000	128000	
Fluoride	370	310	320	250	300	280	
Nitrate	574	909	928	706	1550	1560	
Sulfate	22000	23000	26000	19000	34000	30000	
Total (Allowed) Hold Time							
Alkalinity	6(14)d	5(14)d	5(14)d	13(14)d	5(14)d	5(14)d	
Chloride	9(28)d	8(28)d	8(28)d	16(28)d	21(28)d	21(28)d	
Fluoride	13(28)d	12(28)d	12(28)d	20(28)d	23(28)d	23(28)d	
Nitrate	7(28)d	6(28)d	6(28)d	8(28)d	12(28)d	12(28)d	
Sulfate	6(28)d	5(28)d	5(28)d	21(28)d	15(28)d	15(28)d	

1990 TAN Hydrogeologic Investigation S&A Data Document - November 1991

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - NON-METAL INORGANIC DATA (Continued)

Page 4 of 7

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN TAN-10A REGIONAL AQUIFER TAN10A9002	TAN TAN-11 REGIONAL AQUIFER TAN1190001	TAN TAN-12 REGIONAL AQUIFER TAN1290001	TAN TAN-13A REGIONAL AQUIFER TAN13A9001	TAN TAN-13A REGIONAL AQUIFER TAN13A9002	TAN TAN-14 REGIONAL AQUIFER TAN1490001
	WATER ug/L ANP0890001B	WATER ug/L ANP0890001B	WATER ug/L ANP0890001B	WATER ug/L ANP0990001B	WATER ug/L ANP0990001B	WATER ug/L ANP0890001B
ANALYTES						
Alkalinity	183000	134000	130000	118000	124000	118000
Chloride	89800	36500	44200	2790	2750	3130
Fluoride	320	310	340	300	320	350
Nitrate	1550	782	779	314	318	713
Sulfate	26000	23000	19000	5000	5000	11000
Total (Allowed) Hold Time						
Alkalinity	7(14)d	14(14)d	13(14)d	10(14)d	10(14)d	14(14)d
Chloride	10(28)d	10(28)d	9(28)d	17(28)d	17(28)d	10(28)d
Fluoride	14(28)d	23(28)d	21(28)d	11(28)d	11(28)d	22(28)d
Nitrate	8(28)d	10(28)d	15(28)d	17(28)d	17(28)d	16(28)d
Sulfate	7(28)d	15(28)d	14(28)d	3(28)d	3(28)d	15(28)d

1990 TAN Hydrogeologic Investigation SIA Data Document • November 1991

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - NON-METAL INORGANIC DATA (Continued)

Page 5 of 7

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN TAN-14 REGIONAL AQUIFER TAN1490002	TAN TAN-15 COMPOSITE TAN1590001	TAN TAN-16 REGIONAL AQUIFER TAN1690001	TAN TAN-16 REGIONAL AQUIFER TAN1690002	TAN TAN-17 REGIONAL AQUIFER TAN1790001	TAN TAN-17 REGIONAL AQUIFER TAN1790001	TAN TAN DISP 1 REGIONAL AQUIFER TAN190001
	WATER ug/L ANP0890001B	WATER ug/L ANP0890001B	WATER ug/L ANP0890001B	WATER ug/L ANP0890001B	WATER ug/L ANP0990001B	WATER ug/L ANP0990001B	WATER ug/L ANP0690001B
ANALYTES							
Alkalinity	118000	139000	140000	140000	120000	119000	
Chloride	3480	19700	17600	17700	4940	49800	
Fluoride	370	320	320	320	320	270	
Nitrate	745	1040	1020	1020	486	582	
Sulfate	18000	28000	28000	26000	15000	26000	
Total (Allowed) Hold Time							
Alkalinity	14(14)d	12(14)d	7(14)d	7(14)d	8(14)d	6(14)d	
Chloride	10(28)d	7(28)d	10(28)d	10(28)d	15(28)d	9(28)d	
Fluoride	22(28)d	19(28)d	14(28)d	14(28)d	9(28)d	13(28)d	
Nitrate	16(28)d	13(28)d	8(28)d	8(28)d	15(28)d	7(28)d	
Sulfate	15(28)d	12(28)d	7(28)d	7(28)d	20(28)d	6(28)d	

1990 TAN Hydrogeologic Investigation S&A Data Document - November 1991

TABLE ____ 1990 TAN HYDROGEOLOGIC INVESTIGATION - NON-METAL INORGANIC DATA (Continued)

Page 6 of 7

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TAN TAN DISP 2 REGIONAL AQUIFER TAND290001	TAN TAN DISP 3 REGIONAL AQUIFER TAND390001	TAN TAN DISP 3 REGIONAL AQUIFER TAND390EQ2	TAN GIN-2 REGIONAL AQUIFER TANG290001	TAN GIN-4 REGIONAL AQUIFER TANG490001	TAN USGS-24 REGIONAL AQUIFER TANGS24911
	WATER ug/L ANP0890001B	WATER ug/L ANP0690001B	WATER ug/L ANP0690001B	WATER ug/L ANP0990001B	WATER ug/L ANP0990001B	WATER ug/L TANGS24911
ANALYTICS						
Alkalinity	221000	154000	24000	156000	130000	174000
Chloride	140000	13000	244	76700	65100	71400
Fluoride	240	310	100	310	310	230
Nitrate	2860	841	---	1300	1340	1820
Sulfate	32000	32000	---	40000	26000	36000
Total (Allowed) Hold Time						
Alkalinity	6(14)d	6(14)d	6(14)d	8(14)d	9(14)d	9(14)d
Chloride	12(28)d	22(28)d	22(28)d	15(28)d	16(28)d	13(28)d
Fluoride	26(28)d	24(28)d	24(28)d	9(28)d	10(28)d	5(28)d
Nitrate	7(28)d	13(28)d	13(28)d	15(28)d	16(28)d	19(28)d
Sulfate	19(28)d	16(28)d	16(28)d	20(28)d	14(28)d	6(28)d

TABLE ... 1990 TAN HYDROGEOLOGIC INVESTIGATION - NON-METAL INORGANIC DATA (Continued)

Page 7 of 7

AREA	TAN
LOCATION	USGS-26
TYPE OF LOCATION	REGIONAL AQUIFER
SAMPLE NUMBER	USG2690001
MEDIA	WATER
UNITS	ug/L
SDG NUMBER	ANP0690001B

ANALYTES

Alkalinity	142000
Chloride	13100
Fluoride	610
Nitrate	767
Sulfate	22000

Total (Allowed) Hold Time

Alkalinity	12(14)d
Chloride	20(28)d
Fluoride	6(28)d
Nitrate	19(28)d
Sulfate	22(28)d

DATA QUALIFIER DEFINITIONS

Radiological Data Qualifier Flags (DOF)

- No Flag - The associated sample result is a true positive result and is considered valid and usable.
- J - The associated sample result is an estimated quantity due to quality control or documentation problems. These results should be treated as estimates only. Absolute quantitative or risk assessments should not be made from results flagged with a "J," but these results can be used for yes/no decisions as to whether a contaminant is present at the sampling location.
- U - The constituent of interest was analyzed for, but was not detected above the minimum detectable activity of the instrumentation. There may or may not be a result provided in the data package. If no result is provided a "zero" result should not be entered in its place as the zero may be mistakenly included in statistical calculations performed from the sample results.
- R - The sample result is not to be used for any purpose.

Radiological Analytical Support Level (ASL)

- Level 4 - Level 4 analytical data is defined as sample results that come from an Environmental Restoration Program Sample Management Office approved laboratory and have complete supporting quality control information. Level 4 sample results can be used for any required purpose including; quantification of activity levels, determination of the extent of radioactive contamination, development of remedial actions, and risk assessment calculations. Level 4 is used when comprehensive data quality documentation is required.

TABLE . . . 1990 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES Page 1 of 4

Date: 02/01/91

Lab Name: RML

Case No.: _____

Report No.: STPHY91001

SDG No.: STPHY91001

Field Sample No.	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Error	Units	Anal Date	Sample Date	Sample Size	Yield	Detector ID	DQF	ASL
ANP0690001G	A5110690038	WATER	GAMMA	ND		pCi/gm	11/06/90	11/06/90	540.0000		RML A5	U	4
ANP0890001G	C5102490039	WATER	GAMMA	ND		pCi/gm	10/24/90	10/24/90	540.0000		RML C5	U	4
ANP0990001G	A5120390043	WATER	GAMMA	ND		pCi/gm	12/03/90	12/03/90	540.0000		RML A5	U	4
FET0290001G	A6102990041	WATER	GAMMA	ND		pCi/gm	10/29/90	10/24/90	530.0000		RML A6	U	4
IET0690001G	A6110990090	WATER	GAMMA	ND		pCi/gm	11/09/90	11/05/90	540.0000		RML A6	U	4
IET0690002G	A6110690039	WATER	GAMMA	ND		pCi/gm	11/06/90	11/06/90	540.0000		RML A6	U	4
TAN0190001G	A5102990040	WATER	GAMMA	ND		pCi/gm	10/29/90	10/24/90	530.0000		RML A5	U	4
TAN0290001G	A5102690033	WATER	GAMMA	ND		pCi/gm	10/26/90	10/24/90	530.0000		RML A5	U	4
TAN0390001G	A5110990029	WATER	GAMMA	ND		pCi/gm	11/09/90	11/08/90	540.0000		RML A5	U	4
TAN0390EQ1G	A5110890036	WATER	GAMMA	ND		pCi/gm	11/08/90	11/08/90	540.0000		RML A5	U	4
TAN0490001G	C5110290030	WATER	GAMMA	ND		pCi/gm	11/02/90	10/23/90	530.0000		RML C5	U	4
TAN0590001G	A5102590044	WATER	GAMMA	ND		pCi/gm	10/25/90	10/25/90	540.0000		RML A5	U	4
TAN0690001G	A6110190021	WATER	GAMMA	ND		pCi/gm	11/01/90	10/31/90	520.0000		RML A6	U	4

TABLE . . 1990 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES

Page 2 of 4

Date: 02/01/91

Lab Name: RML

Case No.: _____

Report No.: STPHY91001

SDG No.: STPHY91001

Field Sample No.	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Error	Units	Anal Date	Sample Date	Sample Size	Yield	Detector ID	DQF	ASL
TAN0790001G	A5110290028	WATER	GAMMA	ND		pCi/gm	11/02/90	11/01/90	540.0000		RML A5	U	4
TAN0790002G	A6110290029	WATER	GAMMA	ND		pCi/gm	11/02/90	11/01/90	540.0000		RML A6	U	4
TAN0890001G	A6121890033	WATER	GAMMA	ND		pCi/gm	12/18/90	12/18/90	540.0000		RML A6	U	4
TAN0990001G	A6111590049	WATER	GAMMA	ND		pCi/gm	11/15/90	11/14/90	540.0000		RML A6	U	4
TAN0990002G	C5111590050	WATER	GAMMA	ND		pCi/gm	11/15/90	11/14/90	540.0000		RML C5	U	4
TAN10A9002G	A5103090043	WATER	GAMMA	ND		pCi/gm	10/30/90	10/29/90	540.0000		RML A5	U	4
TAN1190001G	C5103190024	WATER	GAMMA	ND		pCi/gm	10/31/90	10/29/90	540.0000		RML C5	U	4
TAN1290001G	A6102590046	WATER	GAMMA	ND		pCi/gm	10/25/90	10/23/90	540.0000		RML A6	U	4
TAN13A9001G	A5112790046	WATER	GAMMA	ND		pCi/gm	11/27/90	11/26/90	540.0000		RML A5	U	4
TAN13A9002G	A6112790047	WATER	GAMMA	ND		pCi/gm	11/27/90	11/26/90	540.0000		RML A6	U	4
TAN1490001G	A6102690034	WATER	GAMMA	ND		pCi/gm	10/26/90	10/22/90	540.0000		RML A6	U	4
TAN1490002G	C5102990043	WATER	GAMMA	ND		pCi/gm	10/29/90	10/22/90	530.0000		RML C5	U	4
TAN1590001G	C5102590045	WATER	GAMMA	ND		pCi/gm	10/25/90	10/25/90	540.0000		RML C5	U	4

TABLE . . . 1990 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES Page 3 of 4Date: 02/01/91Lab Name: RML

Case No.: _____

Report No.: STPHY91001SDG No.: STPHY91001

Field Sample No.	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Error	Units	Anal Date	Sample Date	Sample Size	Yield	Detector ID	DQF	ASL
TAN1690001G	C5103090045	WATER	GAMMA	ND		pCi/gm	10/30/90	10/30/90	540.0000		RML C5	U	4
TAN1690002G	A6103090044	WATER	GAMMA	ND		pCi/gm	10/30/90	10/30/90	540.0000		RML A6	U	4
TAN1790001G	A5113090046	WATER	GAMMA	ND		pCi/gm	11/30/90	11/29/90	530.0000		RML A5	U	4
TAND190001G	A5110190020	WATER	GAMMA	ND		pCi/gm	11/01/90	10/31/90	540.0000		RML A5	U	4
TAND290001G	A5101890036	WATER	GAMMA	ND		pCi/gm	10/18/90	10/18/90	540.0000		RML A5	U	4
TAND390001G	A6111690042	WATER	GAMMA	ND		pCi/gm	11/16/90	11/13/90	540.0000		RML A6	U	4
TAND390EQ2G	A5111590048	WATER	GAMMA	ND		pCi/gm	11/15/90	11/13/90	540.0000		RML A5	U	4
TANDRL90002G	C5111990030	WATER	GAMMA	ND		pCi/gm	11/19/90	11/19/90	540.0000		RML C5	U	4
TANFB90001G	A6110890037	WATER	GAMMA	ND		pCi/gm	11/08/90	11/08/90	540.0000		RML A6	U	4
TANG290001G	A5112890040	WATER	GAMMA	ND		pCi/gm	11/28/90	11/28/90	540.0000		RML A5	U	4
TANG490001G	C5112790050	WATER	GAMMA	ND		pCi/gm	11/27/90	11/27/90	540.0000		RML C5	U	4
TANGS24911G	A5010391044	WATER	GAMMA	ND		pCi/gm	01/03/91	01/02/91	540.0000		RML A5	U	4
USG2690001G	A5110790022	WATER	GAMMA	ND		pCi/gm	11/07/90	11/07/90	540.0000		RML A5	U	4

TABLE . . 1990 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES Page 4 of 4

Date: 02/01/91

Lab Name: RML

Case No.: _____

Report No.: STPHY91001

SDG No.: STPHY91001

Field Sample No.	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Error	Units	Anal Date	Sample Date	Sample Size	Yield	Detector ID	DQF	ASL
TAN06C9101D	D3010891034	WATER	GAMMA	ND		pCi/gm	01/08/91	01/03/91	892.0000		RML D3	U	4
TAN07C9101D	D3010891030	WATER	GAMMA	ND		pCi/gm	01/08/91	01/03/90	795.0000		RML D3	U	4
TAN12C9101D	D3010891025	WATER	GAMMA	ND		pCi/gm	01/08/91	01/03/91	700.0000		RML D3	U	4
TAN13AC911D	D2010891033	WATER	GAMMA	ND		pCi/gm	01/08/91	01/03/91	778.0000		RML D2	U	4
TAN13C9101D	A6010891032	WATER	GAMMA	ND		pCi/gm	01/08/91	01/03/91	805.0000		RML A6	U	4
TAN14C9101D	A5010891022	WATER	CS-137	6.18E-01	.62E-01	pCi/gm	01/08/91	01/03/91	581.0000		RML A5		4
TAN14C9102D	A5010891031	WATER	CS-137	3.47E-01	.51E-01	pCi/gm	01/08/91	01/03/91	730.0000		RML A5		4
TAN1516911D	D2010891024	WATER	GAMMA	ND		pCi/gm	01/08/91	01/03/91	603.0000		RML D2	U	4
TAN17C9101D	A6010891023	WATER	CS-137	1.79E+00	.14E+00	pCi/gm	01/08/91	01/03/91	633.0000		RML A6		4

TABLE . . . 1990 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR TRITIUM

Page 1 of 3

Date: 02/14/92

Lab Name: RML

Case No.: _____

Report No.: STPHY92012

SDG No.: STPHY92012

Field Sample No.	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Error	Units	Anal Date	Sample Date	Sample Size	Yield	Detector ID	DQF	ASL
TAN0390EQ1F	1	WATER	H3	-1.3E-1	0.9E-1	pCi/mL	11/15/90	11/08/90	10.0000			U	4
TANFB90001F	2	WATER	H3	-5E-2	7E-2	pCi/mL	11/15/90	11/08/90	10.0000			U	4
TAND290001F	3	WATER	H3	3.1E+0	0.3E+0	pCi/mL	11/15/90	10/18/90	10.0000				4
TAN0390001F	4	WATER	H3	9E-2	8E-2	pCi/mL	11/15/90	11/08/90	10.0000			U	4
TAN0490001F	5	WATER	H3	1.0E+0	0.2E+0	pCi/mL	11/15/90	10/23/90	10.0000				4
TAN1290001F	6	WATER	H3	1.8E+0	0.3E+0	pCi/mL	11/15/90	10/23/90	10.0000				4
TAN1490002F	7	WATER	H3	-5E-2	7E-2	pCi/mL	11/15/90	10/22/90	10.0000			U	4
TAN1590001F	8	WATER	H3	3.3E-1	1.0E-1	pCi/mL	11/15/90	10/25/90	10.0000			J	4
TAN10A9002F	9	WATER	H3	3.6E+0	0.4E+0	pCi/mL	11/27/90	10/30/90	10.0000				4
TAND190001F	10	WATER	H3	1.9E+0	0.3E+0	pCi/mL	11/27/90	10/31/90	10.0000				4
TAN0790002F	11	WATER	H3	-1.1E+0	0.7E+0	pCi/mL	11/27/90	11/01/90	10.0000			U	4
TAN1690001F	12	WATER	H3	3.2E-1	0.9E-01	pCi/mL	11/27/90	10/30/90	10.0000			J	4
ANP0690001F	13	WATER	H3	-9E-2	7E-2	pCi/mL	11/27/90	11/06/90	10.0000			U	4

3-24-92

TABLE . . 1990 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR TRITIUM

Page 2 of 3

Date: 02/14/92

Lab Name: RML

Case No.: _____

Report No.: STPHY92012

SDG No.: STPHY92012

Field Sample No.	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Error	Units	Anal Date	Sample Date	Sample Size	Yield	Detector ID	DQF	ASL
ANP0890001F	14	WATER	H3	0E-2	6E-2	pCi/mL	11/27/90	10/24/90	10.0000			U	4
IET0690001F	15	WATER	H3	-1.2E-1	0.8E-1	pCi/mL	11/27/90	11/05/90	10.0000			U	4
USG2690001F	16	WATER	H3	-1.3E-1	0.8E-1	pCi/mL	11/27/90	11/07/90	10.0000			U	4
TAN0190001F	17	WATER	H3	2.4E-1	1.1E-1	pCi/mL	12/14/90	10/24/90	10.0000			J	4
TANG290001F	18	WATER	H3	-2.1E-1	1.0E-1	pCi/mL	12/14/90	11/28/90	10.0000			U	4
TAND390E02F	19	WATER	H3	-3E-2	8E-2	pCi/mL	12/14/90	11/13/90	10.0000			U	4
FET0290001F	20	WATER	H3	-2.2E-1	1.0E-1	pCi/mL	12/14/90	10/24/90	10.0000			U	4
TAN13A9002F	21	WATER	H3	-3E-2	8E-2	pCi/mL	12/14/90	11/26/90	10.0000			U	4
TAND390001F	22	WATER	H3	1.3E-1	0.8E-1	pCi/mL	12/14/90	11/13/90	10.0000			U	4
TAN0790001F	23	WATER	H3	1.5E-1	0.8E-1	pCi/mL	12/14/90	11/01/90	10.0000			U	4
TAN0990002F	24	WATER	H3	6.7E+0	0.6E+0	pCi/mL	12/14/90	11/14/90	10.0000				4
TAN0290001F	25	WATER	H3	-1.3E-1	1.9E-1	pCi/mL	01/11/91	10/24/90	10.0000			U	4
TAN0590001F	26	WATER	H3	1.1E+0	0.3E+0	pCi/mL	01/11/91	10/25/90	10.0000				4

TABLE . . 1990 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR TRITIUM

Page 3 of 3

Date: 02/14/92

Lab Name: RML

Case No.: _____

Report No.: STPHY92012

SDG No.: STPHY92012

Field Sample No.	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Error	Units	Anal Date	Sample Date	Sample Size	Yield	Detector ID	DQF	ASL
TAN0990001F	27	WATER	H3	6.9E+0	0.9E+0	pCi/ml	01/11/91	11/14/90	10.0000				4
TAN1690002F	28	WATER	H3	2.3E-1	1.3E-1	pCi/ml	01/11/91	10/30/90	10.0000			U	4
TAN1790001F	29	WATER	H3	-1.6E-1	1.5E-1	pCi/ml	01/11/91	11/29/90	10.0000			U	4
TAN1490001F	30	WATER	H3	-7E-2	9E-2	pCi/ml	01/11/91	10/22/90	10.0000			U	4
TAN13A9001F	31	WATER	H3	-3E-1	2E-1	pCi/ml	01/11/91	11/26/90	10.0000			U	4
TAN0990001F	32	WATER	H3	-1.9E-1	1.8E-1	pCi/ml	01/11/91	12/03/90	10.0000			U	4
TANG490001F	33	WATER	H3	-3.3E-1	1.8E-1	pCi/ml	01/11/91	11/27/90	10.0000			U	4
TAN0690001F	34	WATER	H3	-3E-1	2E-1	pCi/ml	01/11/91	10/31/90	10.0000			U	4
TAN0690002F	35	WATER	H3	-3.0E-1	1.7E-1	pCi/ml	01/11/91	/ /	10.0000			U	4
TAN0890001F	36	WATER	H3	-4E-1	2E-1	pCi/ml	01/11/91	12/18/90	10.0000			U	4
TAN1190001F	37	WATER	H3	3.3E+0	0.7E+0	pCi/ml	01/11/91	10/29/90	10.0000				4
TANGS24911F	38	WATER	H3	8.3E+0	1.1E+0	pCi/ml	01/11/91	01/02/91	10.0000				4

D-34

3-24-92

TABLE . . 1990 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR STRONTIUM-90

Page 1 of 3

Date: 02/14/92

Lab Name: RML

Case No.: _____

Report No.: STPHY92012

SDG No.: STPHY92012

Field Sample No.	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Error	Units	Anal Date	Sample Date	Sample Size	Yield	Detector ID	DQF	ASL
TAN0390E01H	1	WATER	SR-90	3.1E-3	1.6E-3	pCi/mL	11/28/90	11/08/90	250.0000	30.4	_____	U	4
TANFB90001H	2	WATER	SR-90	8.0E-3	1.9E-3	pCi/mL	11/28/90	11/08/90	250.000	27.7	_____	—	4
TAND290001H	3	WATER	SR-90	2.9E-2	0.2E-2	pCi/mL	01/02/91	10/18/90	250.0000	74.2	_____	—	4
TAN0390001H	4	WATER	SR-90	0.9E-3	1.3E-3	pCi/mL	11/28/90	11/08/90	250.0000	36.4	_____	U	4
TAN0490001H	5	WATER	SR-90	1.8E-3	1.2E-3	pCi/mL	11/28/90	10/23/90	250.0000	39.4	_____	U	4
TAN1290001H	6	WATER	SR-90	0.7E-4	1.2E-4	pCi/mL	11/28/90	10/23/90	250.0000	40.3	_____	U	4
TAN1490002H	7	WATER	SR-90	-1.9E-3	1.1E-3	pCi/mL	11/28/90	10/22/90	250.0000	41.4	_____	U	4
TAN1590001H	8	WATER	SR-90	-2.8E-3	1.3E-3	pCi/mL	12/07/90	10/25/90	250.0000	37.1	_____	U	4
TAN10A9002H	9	WATER	SR-90	4.7E-1	0.3E-1	pCi/mL	01/07/91	10/30/90	250.0000	80.9	_____	—	4
TAND190001H	10	WATER	SR-90	-2.5E-3	1.0E-3	pCi/mL	12/07/90	10/31/90	250.0000	45.0	_____	U	4
TAN0790002H	11	WATER	SR-90	-1.7E-3	0.8E-3	pCi/mL	12/07/90	11/01/90	250.0000	62.5	_____	U	4
TAN1690001H	12	WATER	SR-90	2E-4	8E-4	pCi/mL	12/10/90	10/30/90	250.0000	61.5	_____	U	4
ANP0690001H	13	WATER	SR-90	1.6E-3	0.7E-3	pCi/mL	12/10/90	11/06/90	250.0000	67.1	_____	—	4

TABLE . . . 1990 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR STRONTIUM-90

Page 2 of 3

Date: 02/14/92Lab Name: RML

Case No.: _____

Report No.: STPHY92012SDG No.: STPHY92012

Field Sample No.	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Error	Units	Anal Date	Sample Date	Sample Size	Yield	Detector ID	DQF	ASL
ANP0890001H	14	WATER	SR-90	0.9E-4	1.0E-4	pCi/mL	12/10/90	10/24/90	250.0000	47.5	_____	U	4
IET0690001H	15	WATER	SR-90	-1.5E-3	0.7E-3	pCi/mL	12/10/90	11/05/90	250.0000	63.9	_____	U	4
USG2690001H	16	WATER	SR-90	-2.1E-3	0.8E-3	pCi/mL	12/12/90	11/07/90	250.0000	57.3	_____	U	4
TAN0190001H	17	WATER	SR-90	1.8E-3	0.8E-3	pCi/mL	12/12/90	10/24/90	250.0000	64.3	_____	4	
TANG290001H	18	WATER	SR-90	-3.6E-3	1.0E-3	pCi/mL	12/12/90	11/28/90	250.0000	52.2	_____	U	4
TAND390EQ2H	19	WATER	SR-90	-3.7E-3	0.7E-3	pCi/mL	12/12/90	11/13/90	250.0000	70.8	_____	U	4
FE10290001H	20	WATER	SR-90	-2.2E-3	0.7E-3	pCi/mL	12/12/90	10/24/90	250.0000	71.7	_____	U	4
TAN13A9002H	21	WATER	SR-90	-5E-4	7E-4	pCi/mL	12/12/90	11/26/90	250.0000	68.5	_____	U	4
TAND390001H	22	WATER	SR-90	-3.0E-3	0.7E-3	pCi/mL	12/12/90	11/13/90	250.0000	72.8	_____	U	4
TAN0790001H	23	WATER	SR-90	1.3E-3	0.6E-3	pCi/mL	12/12/90	11/01/90	250.0000	83.2	_____	4	
TAN0990002H	24	WATER	SR-90	6.9E-3	0.7E-3	pCi/mL	12/12/90	11/14/90	250.0000	87.8	_____	4	
TAN0290001H	25	WATER	SR-90	1.20E-2	0.12E-2	pCi/mL	12/28/90	10/24/90	250.0000	62.4	_____	R	4
TAN0590001H	26	WATER	SR-90	6.2E-3	0.9E-3	pCi/mL	12/28/90	10/25/90	250.0000	71.0	_____	4	

TABLE . . 1990 TAN HYDROGEOLOGIC INVESTIGATION - ANALYSIS RESULTS FOR STRONTIUM-90

Page 3 of 3

Date: 02/14/92Lab Name: RML

Case No.: _____

Report No.: STPHY92012SDG No.: STPHY92012

Field Sample No.	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Error	Units	Anal Date	Sample Date	Sample Size	Yield	Detector ID	DQF	ASL
TAN0990001H	27	WATER	SR-90	1.59E-2	0.13E-2	pCi/mL	12/28/90	11/14/90	250.0000	73.4			4
TAN1690002H	28	WATER	SR-90	1.32E-2	0.12E-2	pCi/mL	12/28/90	10/30/90	250.0000	69.4			4
TAN1790001H	29	WATER	SR-90	2.0E-2	0.3E-2	pCi/mL	01/14/91	11/29/90	250.0000	61.9			4
TAN1490001H	30	WATER	SR-90	4.7E-3	0.7E-3	pCi/mL	12/28/90	10/22/90	250.0000	82.5			4
TAN13A9001H	31	WATER	SR-90	2.0E-3	0.6E-3	pCi/mL	01/02/91	11/26/90	250.0000	82.5			4
TAN0990001H	32	WATER	SR-90	2.72E-2	0.18E-2	pCi/mL	01/02/91	12/03/90	250.0000	76.1			4
TANG490001H	33	WATER	SR-90	-9E-4	7E-4	pCi/mL	01/14/91	11/27/90	250.0000	69.0		U	4
TAN0690001H	34	WATER	SR-90	1.30E-2	0.11E-2	pCi/mL	01/11/91	10/31/90	250.0000	73.8			4
TAN0690002H	35	WATER	SR-90	1.19E-2	0.10E-2	pCi/mL	01/11/91	/ /	250.0000	74.7			4
TAN0890001H	36	WATER	SR-90	1.03E-2	0.10E-2	pCi/mL	01/11/91	12/18/90	250.0000	74.9			4
TAN1190001H	37	WATER	SR-90	3.0E-3	0.6E-3	pCi/mL	01/11/91	10/29/90	250.0000	83.9			4
TANGS24911H	38	WATER	SR-90	1.08E-2	0.13E-2	pCi/mL	02/06/91	01/02/91	250.0000	49.2			4